

THE
NATURAL HISTORY
OF
QUADRUPEDS,
AND
CETACEOUS ANIMALS,
FROM THE WORKS
OF THE
BEST AUTHORS, ANTIENT AND MODERN;
EMBELLISHED WITH
NUMEROUS PLATES,
ACCURATELY COLOURED FROM NATURE.

~~~~~  
IN TWO VOLUMES.  
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VOL. II.



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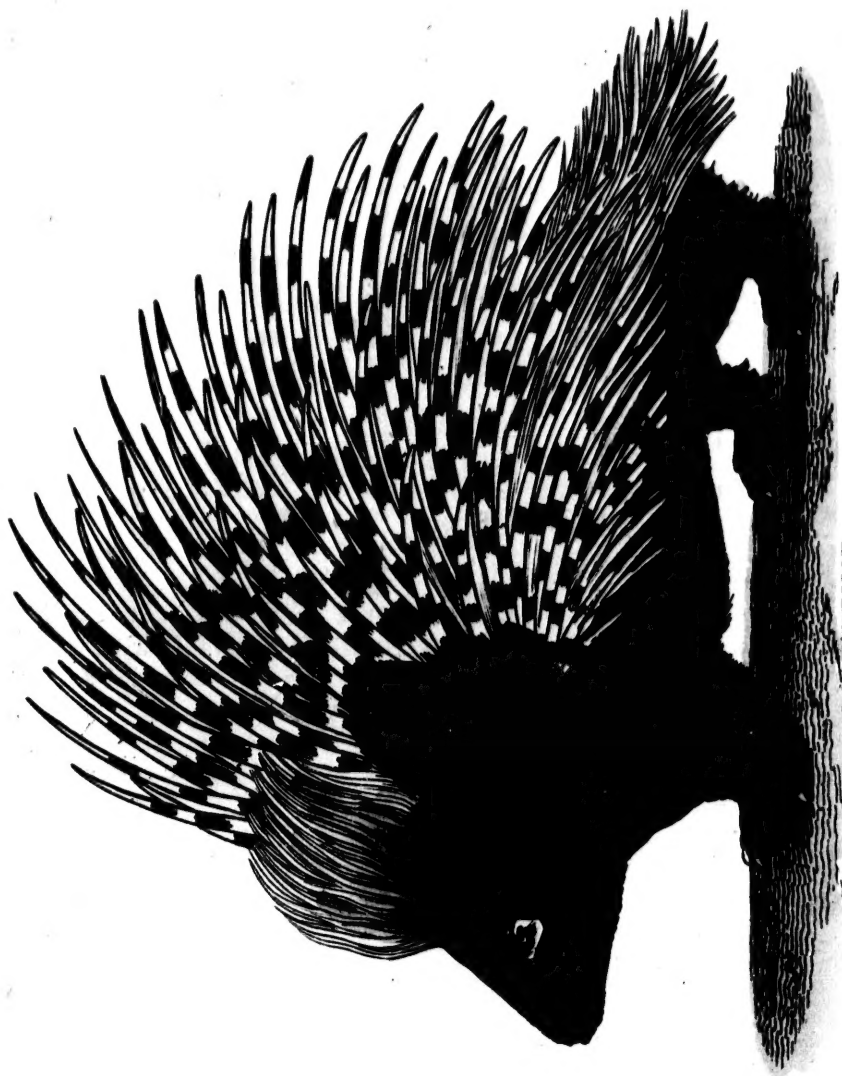
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PORCUPINE.



QUADRUPEDS.

PORCUPINE TRIBE.

TO a superficial observer, the animals belonging to this tribe would seem entitled to a place with hedgehogs ; but they have no farther similitude than in the spiny covering of their bodies. None of the species are supposed to be carnivorous.

The porcupines have two front teeth, cut obliquely, both in the upper and under jaw ; and eight grinders. They have four toes on the fore, and five on the hinder feet ; and the body is covered with spines, intermixed with hair.

COMMON PORCUPINE.

THE general length of the common porcupine, is about two feet and a half from the head to the end of the tail. The upper parts of the body are covered with hard and sharp spines, some of which measure from nine to fifteen inches in length. These are variegated with alternate black and white rings ; and as some of them are attached to the skin only by a delicate pedicle, they easily fall off. They are formed of complete quills, wanting only the vane to be real feathers. The animal has the power of elevating or depressing them at will ;

and when he walks, they (particularly those about the tail) make a rattling noise, by striking against each other. The head, belly, and legs, are covered with strong dusky bristles, intermixed with softer hairs ; on the top of the head these are very long ; and curved backwards, somewhat like a ruff or crest.

Such is the formation of this quadruped, in those parts in which it differs from most others : as to the rest of its figure, the muzzle bears some resemblance to that of a hare, but is black ; the legs are very short, and the feet have five toes, both before and behind, armed with strong claws ; the ears are thinly covered with very fine hair, and are in shape like those of mankind ; the eyes are small, like those of a hog, being only one third of an inch from one corner to the other. After the skin is taken off, there appears a kind of paps on those parts of the body from whence the large quills proceed ; these are about the size of a small pea, each answering to as many holes which appear on the outward surface of the skin, and which are about half an inch deep, like as many hollow pipes, wherein the quills are fixed, as in so many sheaths.

In its manners, the common porcupine is very harmless and inoffensive, never itself becoming the aggressor ; and when pursued, it climbs the first tree it can reach, where it remains till the patience of its adversary is exhausted. If, however, it is roused to self-defence, even the lion dares not venture to attack it.

The late sir Ashton Lever had a live porcupine, which he frequently turned out on the grass behind his house, to play with a tame hunting leopard, and a large Newfoundland dog. As soon as they were let loose, the leopard and dog began to pursue the porcupine, who always at first endeavoured to

escape by flight ; but, on finding that ineffectual, he would thrust his head into some corner, making a snorting noise, and erecting his spines ; with which his pursuers pricked their noses, till they quarrelled between themselves, and thus gave him an opportunity to escape.

It has been asserted by many credulous travellers, that the porcupines, when much provoked, dart their quills at the object by which they are enraged. This opinion, however, has been fully refuted by many accurate naturalists, who have taken pains to inquire into the matter. The usual method of defence adopted by these animals, is to recline themselves on one side ; and, on the approach of their enemy, to rise up quickly, and gore him with the erected prickles of their other side. It is also said, that when the porcupine meets with serpents, against whom he carries on a perpetual war, he closes himself up like a ball, concealing his head and feet, and then rolls upon and kills them with his bristles, without running any risk of being wounded himself. M. Le Vailant says, that, owing to some pernicious quality in the quills, one of his Hottentots, who had received a wound in the leg from a porcupine, was ill for more than six months. He also informs us, that a gentleman at the Cape, in teasing one of these animals, received a wound in the leg, which nearly occasioned his loss of the limb ; and notwithstanding every possible care, he suffered severely from it for above four months, during one of which he was confined to his bed.

When the animal is moulting, or casting its quills, it sometimes shakes them off with so much force, that they will fly to the distance of a few yards, and even bend their points against any hard substance they happen to strike. It may have

been this circumstance which gave rise to the report of its darting its quills against its enemy.

Those which are brought to this country to be shown, are usually fed on bread, milk, and fruits ; but they will not refuse meat when it is offered them ; and it is probable, they prefer it in a wild state, when it is to be had. The porcupine is also known to be extremely hurtful to gardens ; and, where it enters, does incredible damage.

The Americans who hunt this animal, assure us, that the porcupine lives from twelve to fifteen years. During the time of coupling, which is in the month of September, the males become very fierce and dangerous, and often are seen to destroy each other with their teeth. The female goes with young seven months, and brings forth but one at a time ; this she suckles but about a month, and accustoms it betimes to live, like herself, upon vegetables and the bark of trees ; she is very fierce in its defence ; but, at other seasons, she is fearful, timid, and harmless.

The Indians eagerly pursue the porcupine, in order to make embroidery of its quills, and to eat its flesh. This, as we are commonly told, is very tolerable eating ; however, we may expect wretched provisions when the savages are to be our caterers, for they eat every thing that has life. They dye the quills of various colours, and then splitting them into slips, as we see in the making of a cane chair, they embroider with these their belts, baskets, and several other necessary pieces of furniture.

It inhabits India, the sand hills to the southwest of the Caspian sea, Southern Tartary, Persia, and Palestine, and all parts of Africa. It is found wild in Italy ; but at the same time it is thought not to have been originally a native of Europe.

It is bought in the markets of Rome for the table. The Italian porcupines have shorter quills, and a less crest than those of Asia and Africa. Some of these animals produce a bezoar. These bezoars were once highly valued, and have been sold for five hundred crowns a-piece.

LONG-TAILED PORCUPINE.

THE long-tailed porcupine has also long whiskers ; large bright eyes ; and short naked ears. His body is short and thick, and covered with long stiff hairs, as sharp as needles, of different colours, gilded, green, or of a reddish tinge, as the rays of light fall on them. His feet are divided into five toes ; that which serves as a thumb turns backwards. The tail is as long as the body, very slender at the end, which consists of a thick tuft. The bristles are thick in the middle, appear as if jointed, and rise one out of the other like grains of rice. They are transparent, and of a silvery appearance. It inhabits the isles of the Indian Archipelago, and lives in the forests.

BRASILIAN PORCUPINE.

THE Brazilian porcupine has a small head, blunt nose, long white whiskers, and a bed of small spines beneath the nose. The top of its head, its back, its sides, and the base of its tail, are also covered with spines. The longest of these on the lower part of the back and tail are about three inches long, very sharp, and white, barred near their points with black. They adhere close to the skin, which is quite naked between them ; and are shorter and weaker as they approach the belly. On the breast, belly, and lower parts of the legs, they are converted into dark brown

bristles. Its feet are divided into four toes each, with very long claws, and a great protuberance on the place of the thumb. Its tail is eighteen inches long, slender and taper towards the end ; for the last ten inches it is almost naked, having only a few hairs upon it ; but for that space, it has a strong prehensile quality. The animal is about a foot long from the nose to the tip of the tail.

It inhabits Mexico and Brasil ; it lives in the woods, and preys, not only on fruits, but also on birds ; it sleeps by day in the hollow of trees or beneath their roots, and preys by night ; and generally makes a noise with its nostrils, as if out of breath ; it grunts also like a hog. It climbs trees, but very slowly ; in descending, for fear of falling, it twists its tail round the branches ; it spends no more arrows in darting its quills than the rest ; it grows very fat ; and its flesh is said to be very white and good. They may be tamed. Piso says there is a greater and a lesser kind of this species.

MEXICAN PORCUPINE.

THE Mexican porcupine is of a dusky colour, with long bristles intermixed with its fur. Its spines are three inches long, slender, and varied with white and yellow ; but they are scarcely apparent, except on the tail, which is thicker and shorter than that of the preceding species ; from the middle to the end it is free from spines. It grows to the size of a middle sized dog. It inhabits the mountains of Mexico, lives on the summer fruits, and may easily be made tame. The Indians pulverize the quills, and say they are very efficacious as a remedy for the gravel ; and that applied whole to the forehead, they will relieve the most

violent head-ach. They adhere till filled with blood, and then drop off. It is said to be a fetid animal.

CANADA PORCUPINE.

THE porcupine met with in Canada, and the other parts of North America, as high as Hudson's Bay, has short ears hid in its fur. Its head, body, legs, and the upper part of its tail, are covered with soft, long, dark brown hair ; on the upper part of the head, back, body, and tail, there are numbers of sharp strong quills. The longest, measuring about three inches, are on the back, the least towards the head and sides ; but they are all hid in the hair. There are some stiff straggling hairs intermixed, three inches longer than the rest, and tipped with a dirty white. The under side of its tail is white. It has four toes on the fore feet, five behind, each armed with long claws, hollowed on their under side. The form of its body is exactly like that of a beaver ; but it is not half the size. One brought from Newfoundland was about the size of a hare, but more compactly made. Its tail was about six inches long. They vary in colour. One in the Leverian museum was entirely white. It is about the size of a fox, but a very differently formed animal, as it is very short and thick.

They make their nests under the roots of great trees, and will also climb among the boughs. The Indians kill them by striking them over the nose. They are very plentiful near Hudson's Bay ; and many of the trading Indians depend on them for food, esteeming them both wholesome and pleasant. They feed on wild fruits and the bark of trees, especially the juniper. They eat snow in winter, and drink water in summer ; but

avoid going into it. When they cannot avoid their pursuer, they will sidle towards him, in order to touch him with their quills, which seem but weak weapons of defence; for on stroking the hair, they will come out of the skin sticking to the hand. The Indians apply them to various purposes; for piercing their noses and ears to make holes for their ear-rings, and other finery; they also trim their deer skin habits with fringes made of the quills, or cover with them their bark boxes.

BRUSH-TAILED PORCUPINE.

THIS animal, which is described and figured in the seventh supplemental volume of the Count de Buffon's History of Quadrupeds, is a native of Malacca. It differs, according to that author, from the common porcupine in several particulars, and especially in the form and length of its tail, which is naked, scaly, about a third of the length of the body, and terminated by a tuft of long flat hairs, or rather small white laminæ, resembling strips of parchment. The body measures fifteen or sixteen inches, and is consequently less than that of the European porcupine; the head also is longer in proportion; and the snout, which is covered with a black skin, is furnished with whiskers of five or six inches in length; the eyes are small and black; the ears smooth, round, and naked; there are four toes united by a common membrane, on the fore feet, with only a tubercle in place of a fifth toe; the hind feet are united in a similar manner, by a membrane somewhat smaller than that of the fore feet; the legs are covered with blackish hair; the flanks and upper part of the body are whitish, and covered with spines, shorter than those of the common porcupine, and

of a peculiar shape, being a little flattened, and channeled with a longitudinal furrow; they are white at the point, and black in the middle, and many of them are black above and white below; and from this mixture results a varying cast of black and white over the whole body of the animal. This species, like others of its genus, which nature seems to have provided with defensive weapons only, possesses a kind of instinctive fierceness; when approached, it stamps with its feet, and appears to inflate itself, raising and shaking its quills. It sleeps much by day, and is active only by night. It eats in a sitting posture, holding apples and other fruits between its paws, peeling them with its teeth; it is particularly pleased with stone fruits, and especially with apricots; it will also eat melons, and is never observed to drink.

CAVY TRIBE.

THESE animals were arranged by Linnæus along with the mice; but that tribe having been thought much too extensive, and comprehending many animals that differed very materially both in form and habit, it was at length thought necessary to arrange the cavies under a separate head; distinguishing them by the structure of their feet, the proportion of their limbs, &c. the teeth being nearly the same in all.

They have in each jaw two wedge-shaped front teeth, and eight grinders. They have likewise four or five toes on the fore feet, and from three

to five on the hinder. The tail is either very short, or altogether wanting. And they have no collar bones.

They seem to hold a middle place between the murine quadrupeds and the hares. Nearly all the species, which are seven in number, have a slow, and some of them a leaping pace. Their habitations are burrows ; which they form beneath the roots of trees, or in the ground. They live entirely on vegetable food, and are all natives of America : two or three species, however, are found also on the old continent.

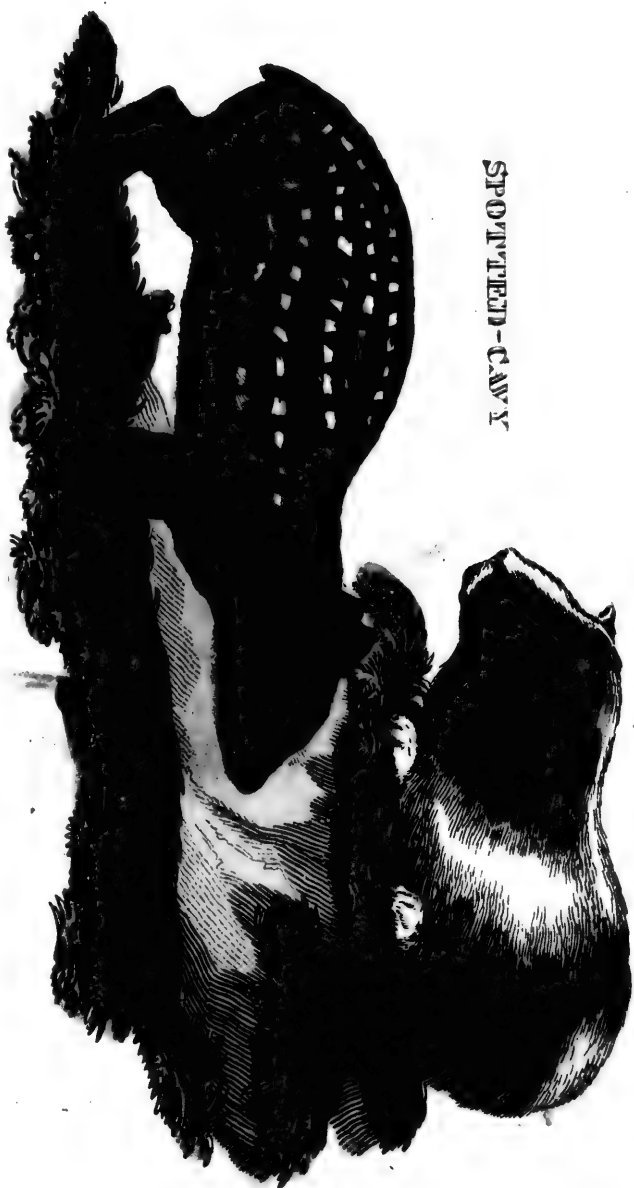
GUINEA PIG.

THE guinea pig is a native of the warmer climates ; but has been so long rendered domestic, and so widely diffused, that it has now become common in every part of the world. There are few unacquainted with the figure of this little animal ; in some places it is considered as the principal favourite ; and is often found even to displace the lap-dog. It is less than a rabbit, and its legs are shorter ; they are scarce seen, except when it moves ; and the neck also is so short, that the head seems stuck upon the shoulders. The ears are short, thin, and transparent ; the hair is like that of a sucking pig, from whence it has taken the name ; and it wants even the vestiges of a tail. In other respects, it has some similitude to the rabbit. When it moves, its body lengthens like that animal ; and when it is at rest, it gathers up in the same manner. Its nose is formed with the rabbit-lip, except that its nostrils are much farther asunder. Like all other animals in a domestic state, its colours are different ; some are white, some are red, and others both red and white. It differs from the rabbit in the number of its

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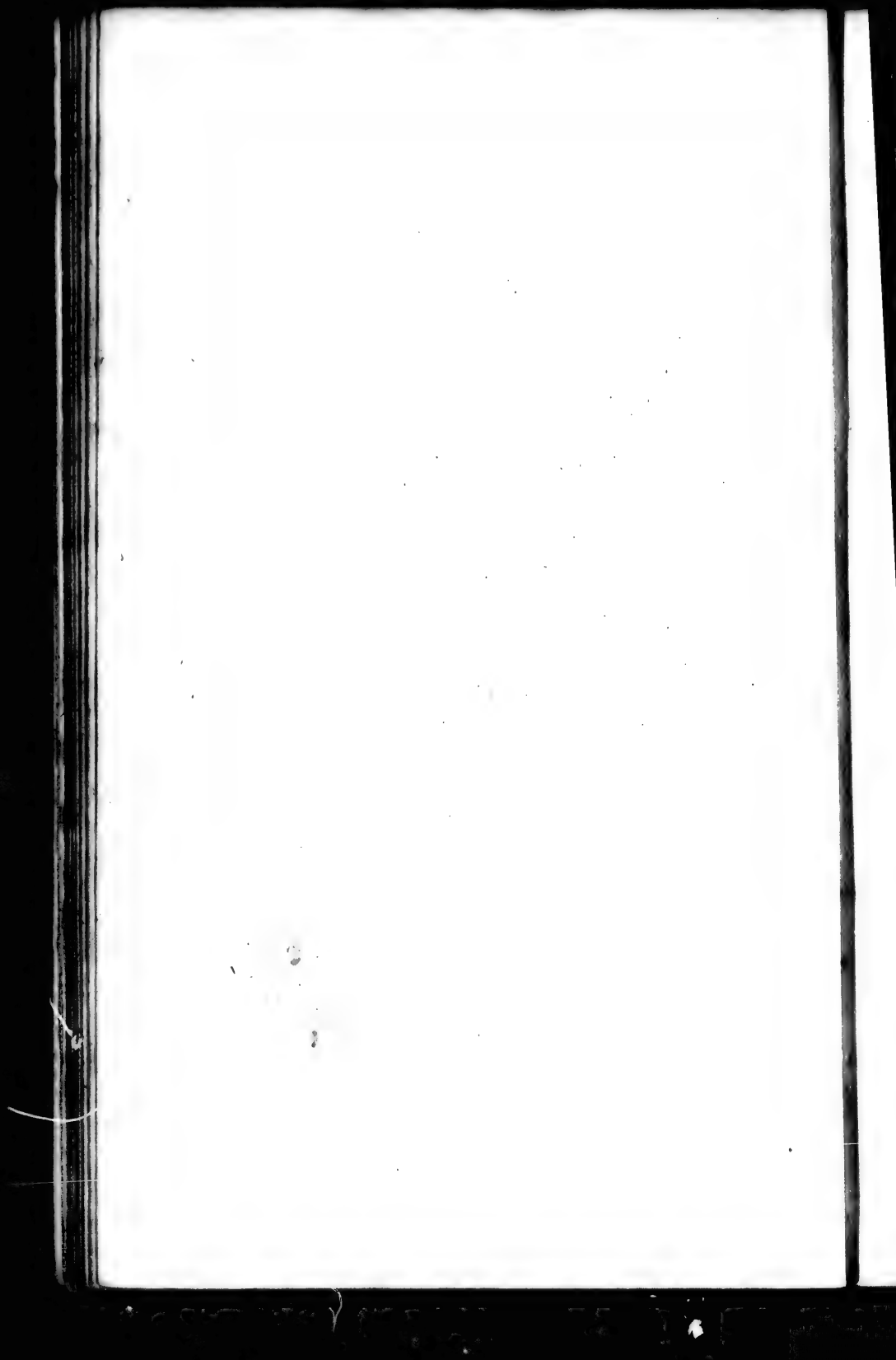
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SPOTTED-CAYE

GUINEA-PIG



toes, having four toes on the feet before, and but three on those behind. It strokes its head with the fore feet, like a rabbit ; and like it, sits upon the hind feet ; for which purpose, there is a naked callous skin on the back part of the legs and feet.

These animals are, of all others, the most helpless and inoffensive. They are scarce possessed of courage sufficient to defend themselves against the meanest of all quadrupeds, a mouse. Their only animosity is exerted against each other ; for they will often fight very obstinately ; and the stronger is often known to destroy the weaker. But against all other aggressors, their only remedy is patience and non-resistance.

As to their manner of living among us, they owe their lives entirely to our unceasing protection. They must be constantly attended, shielded from the excessive colds of the winter, and secured against all other domestic animals, which are apt to attack them from every motive, either of appetite, jealousy, or experience of their pusillanimous nature. Such, indeed, is their stupidity, that they suffer themselves to be devoured by the cats without resistance ; and, differing from all other creatures, the female sees her young destroyed without once attempting to protect them.

Their usual food is bran, parsley, or cabbage leaves ; but there is scarce a vegetable cultivated in our gardens that they will not gladly devour. The carrot top is a peculiar dainty ; as also salad ; and those who would preserve their healths, would do right to vary their food ; for if they be continued on a kind too succulent or too dry, the effects are quickly perceived upon their constitutions. When fed upon recent vegetables, they seldom drink. But it often happens that, conducted by nature, they seek drier food, when the former

disagrees with them. They then gnaw clothes, paper, or whatever of this kind they meet with ; and on these occasions they are seen to drink like most other animals, which they do by lapping. They are chiefly fond of new milk ; but in case of necessity, are content with water.

They move pretty much in the manner of rabbits, though not near so swiftly ; and when confined in a room, seldom cross the floor, but generally keep along the wall. The male usually drives the female on before him, for they never move abreast together, but constantly the one seems to tread in the footsteps of the preceding. They chiefly seek for the darkest recesses, and the most intricate retreats ; where, if hay be spread as a bed for them, they continue to sleep together, and seldom venture out but when they suppose all interruption removed. On these occasions they act as rabbits ; they swiftly move forward from their bed, stop at the entrance, listen, look round, and if they perceive the slightest approach of danger, they run back with precipitation. In very cold weather, however, they are more active, and run about in order to keep themselves warm.

They are a very cleanly animal, and very different from those whose name they go by. If the young ones happen to fall into the dirt, or be any other way discomposed, the female takes such an aversion to them, that she never permit them to visit her more. Indeed, her whole employment, as well as that of the male, seems to consist in smoothing their skins, disposing their hair, and improving its gloss. The male and female take this office by turns ; and when they have thus brushed up each other, they then bestow all their concern upon their young, taking particular care to make their hair lie smooth, and biting them if they appear refractory. As they are so solicitous for

elegance themselves, the place where they are kept must be regularly cleaned, and a new bed of hay provided for them at least every week. Being natives of a warm climate, they are naturally chilly in ours; cleanliness, therefore, assists warmth, and expels moisture. They may be thus reared, without the aid of any artificial heat; but, in general, there is no keeping them from the fire in winter, if they be once permitted to approach it.

When they go to sleep, they lie flat on their bellies, pretty much in their usual posture; except that they love to have their fore feet higher than their hinder. For this purpose they turn themselves several times round before they lie down to find the most convenient situation. They sleep like the hare, with their eyes half open; and continue extremely watchful, if they suspect danger. The male and female are never seen both asleep at the same time; but while he enjoys his repose, she remains upon the watch, silently continuing to guard him, and her head turned towards the place where he lies. When she supposes that he has had his turn, she then awakes him with a kind of murmuring noise, goes to him, forces him from his bed, and lies down in his place. He then performs the same good turn for her; and continues watchful till she also has done sleeping.

These animals are exceedingly salacious, and generally are capable of coupling at six weeks old. The female never goes with young above five weeks; and usually brings forth from three to five at a time; and this not without pain. But what is very extraordinary, the female admits the male the very day she has brought forth, and becomes again pregnant; so that their multiplication is astonishing. She suckles her young but about twelve or fifteen days; and during that time

does not seem to know her own ; for if the young of any other be brought, though much older, she never drives them away, but suffers them even to drain her to the disadvantage of her own immediate offspring. They are produced with the eyes open, like all others of the cavy kind ; and in about twelve hours equal even to the dam in agility. Although the dam has but two teats, yet she abundantly supplies them with milk ; and they are also capable of feeding upon vegetables, almost from the very beginning. If the young ones are permitted to continue together, the stronger, as in all other societies, soon begins to govern the weak. Their contentions are often long and obstinate ; and their jealousies very apparent. Their disputes are usually for the warmest place, or the most agreeable food. If one of them happens to be more fortunate in this respect than the rest, the strongest generally comes to dispossess it of its advantageous situation. Their manner of fighting, though terrible to them, is ridiculous enough to a spectator. One of them seizes the hair on the nape of the other's neck with its fore teeth, and attempts to tear it away ; the other, to retaliate, turns its hinder parts to the enemy, and kicks up behind like a horse, and with its hinder claws scratches the sides of its adversary ; so that sometimes they cover each other with blood. When they contend in this manner, they gnash their teeth pretty loudly, and this is often a denunciation of mutual resentment.

These, though so formidable to each other, yet are the most timorous creatures upon earth, with respect to the rest of animated nature : a falling leaf disturbs them, and every animal overcomes them. From hence they are difficultly tamed ; and will suffer none to approach them, except the person by whom they are fed. Their manner of

eating is something like that of the rabbit ; and, like it, they appear also to chew the cud. Although they seldom drink, they make water every minute. They grunt somewhat like a young pig, and have a more piercing note to express pain. In a word, they do no injury ; but then, except the pleasure they afford the spectator, they are of very little benefit to mankind. Some, indeed, dress and eat them ; but their flesh is indifferent food, and by no means a reward for the trouble of rearing them. This, perhaps, might be improved, by keeping them in a proper warren, and not suffering them to become domestic ; however, the advantages that would result from this, would be few, and the trouble great ; so that it is likely they would continue an useless, inoffensive dependent, rather propagated to satisfy caprice than to supply necessity.

CAPIBARA CAVY.

THE capibara has a very large and thick head and nose, small rounded ears, and large black eyes. Its upper jaw is longer than the lower. It has two strong and great cutting teeth, and eight grinders in each jaw. Each of these grinders forms, on its surface, seemingly three teeth, each flat at their ends. Its legs are short ; its toes are long ; these are connected, near their bottoms, by a small web, and guarded at their ends by a small hoof. It has no tail. The hair on the body is short, rough, and brown. On its nose it has long and hard whiskers. It grows to the size of a hog of two years old. It inhabits the country from the isthmus of Darien to the Brasils, and even to Paraguay, and lives in fenny parts, not remote from the banks of great rivers, such as the Oronoko, Amazon, and the Rio de la Plata. It runs slowly ;

but swims and dives remarkably well, and keeps under water so long, that the hunters frequently give up for lost those they have been in chase of. It feeds on fruits and vegetables, especially sugar-canes; but is very dexterous in catching fish, which it brings on shore, and eats at its ease. It sits up, and holds its prey with its fore feet, feeding like an ape.

They keep always in pairs, a male and a female, or else in great herds; feed in the night, and commit great ravages in gardens. They make a horrible noise, like the braying of an ass. They are of a gentle and peaceable disposition, easily made tame, and grow very familiar. Their flesh is eaten; it is tender, but has an oily and fishy taste, in its wild state, in consequence of its food. Buffon thinks they might be propagated in Europe. The female has but one young one at a birth.

AGOUTI.

THIS animal is found in great abundance in the southern parts of America, and has by some been called the rabbit of that continent. But, though in many respects it resembles the rabbit, yet still in many more it differs, and is, without all doubt, an animal peculiar to the new world only. The agouti is about the size of a rabbit, and has a head very much resembling it, except that the ears are very short in comparison. It resembles the rabbit also in the arched form of its back, in the hind legs being longer than the fore, and in having four great cutting teeth, two above and two below; but then it differs in the nature of its hair, which is not soft and downy as in the rabbit, but hard and bristly like that of a sucking pig, and of a reddish brown colour. It differs also in the tail,

which is even shorter than in the rabbit, and entirely destitute of hair. Lastly, it differs in the number of its toes, having but three on the hinder feet, whereas the rabbit has five. All these distinctions, however, do not countervail against its general form, which resembles that of a rabbit, and most travellers have called it by that name.

As this animal differs in form, it differs still more in habitudes and disposition. As it has the hair of a hog, so also it has its voraciousness. It eats indiscriminately of all things; and when satiated, hides the remainder, like the dog or the fox, for a future occasion. It takes a pleasure in gnawing and spoiling every thing it comes near. When irritated, its hair stands erect along the back, and, like the rabbit, it strikes the ground violently with its hind feet. It does not dig a hole in the ground, but burrows in the hollows of trees. Its ordinary food consists of the roots of the country, potatoes and yams, and such fruits as fall from the trees in autumn. It uses its fore paw, like the squirrel, to carry its food to its mouth; and as its hind feet are longer than the fore, it runs very swiftly upon plain ground, or up a hill, but upon a descent it is in danger of falling. Its sight is excellent, and its hearing equals that of any other animal; whenever it is whistled to, it stops to hearken. The flesh of such as are fat and well fed is tolerable food, although it has a peculiar taste, and is a little tough. The French dress it like a sucking pig, as we learn from M. Buffon's account; but the English dress it with a pudding in its belly like a hare. It is hunted by dogs; and whenever it has got into a sugar-ground, where the canes cover the place, it is easily overtaken, for it is embarrassed every step it takes, so that a man may easily come up with it without any other assistance. When in the open country, it usually

runs with great swiftness before the dogs until it gains its retreat, within which it continues to hide, and nothing but filling the hole with smoke can force it out. For this purpose, the hunter burns faggots or straw at the entrance, and conducts the smoke in such a manner, that it fills the whole cavity. While this is doing, the poor little animal seems sensible of its danger, and begs for quarter with a most plaintive cry, seldom quitting its hole till the utmost extremity. At last, when half suffocated, it issues out, and trusts once more to its speed for protection. When still forced by the dogs, and incapable of making good a retreat, it turns upon the hunters, and with its hair bristling like a hog, and standing upon its hind feet, it defends itself very obstinately. Sometimes it bites the legs of those that attempt to take it, and will take out the piece wherever it fixes its teeth.

Its cry, when disturbed or provoked, resembles that of a sucking pig. If taken young, it is easily tamed, continues to play harmlessly about the house, and goes out and returns of its own accord. In a savage state it usually continues in the woods, and the female generally chooses the most obscure parts to bring forth her young. She there prepares a bed of leaves and dry grass, and generally brings forth two at a time. She breeds twice or thrice a year, and carries her young from one place to another, as convenience requires, in the manner of a cat. She generally lodges them, when three days old, in the hollow of a tree, suckling them but for a very short time, for they soon come to perfection, and it should consequently follow, that they soon grow old.

ACOUCHEY.

THIS animal, which is by some regarded as a variety of the agouti, differs in being somewhat smaller, rather thinner, and entirely of an olive colour, paler, or more inclined to whitish beneath; the tail is also longer than on the agouti. It is a native of the same parts of South America with the agouti; is of a similar manner; and is also tamed with equal readiness. We are informed by Mons. de la Borde, that it does not attempt the water like the agouti, but will rather suffer itself to be taken. Mons. de la Borde also adds, that it produces but one young at a time. Its voice resembles that of the cavia cobaya, or guinea-pig.

ROCK CAVY, OR APEREA.

THIS species has also its upper lip divided; short ears; four toes on the fore feet, and three on the hind. It has no tail. The colour of the upper part of its body is black, mottled with tawny; but its throat and belly are white. It is one foot in length, and inhabits Brasil, living in the holes of rocks, whence it is driven out, and taken by little dogs. For the table, it is preferable to our best rabbits; its motions are like those of the hare. Some of them resemble the hare in colour too; but the head is longer, and the ears are not above an inch in length; the fore legs exceed not three inches; those behind are a little longer.

PATAGONIAN CAVY.

THE ears of the Patagonian cavy are long and much dilated near the bottom. Its upper lip is divided. On each side of its nose, there are tufts of soft hair, and long whiskers. The tip of its nose is black; its face, its back, and the fore part of its legs, are cinereous and rust coloured; its breast and sides are tawny; its belly is of a dirty white. On each thigh it has a white patch. Its rump is black; its legs are very long; its claws are long, straight, and black; it has four on the fore feet, three on the hind. Its tail is a mere naked stump. Some of these creatures weigh six-and-twenty pounds. They are found in plenty about Port Desire, in Patagonia. They live in holes of the earth, like the rabbit. Their flesh is of a snowy whiteness, and of an excellent flavour. Sir John Narborough, and other voyagers, call it a hare.

SPOTTED CAVY, OR PACA.

THIS species of the cavy has a round head; the upper jaw longer than the lower; large nostrils; a divided lip; long whiskers; short and naked ears, and a thick neck. The eyes are brown, large, and prominent. It has five rows of spots on each side. Its hair is short and hard; on the upper part of the body, a dark brown. Its sides, on the lower part, are marked lengthways with lines of grey spots. Its belly is white. In some, perhaps young ones, the sides and spots are of a pale yellow. It has five toes on each foot; and only the mere rudiment of a tail. Its make and voice resemble those of a pig. In some places, it is called the hog-rabbit. It

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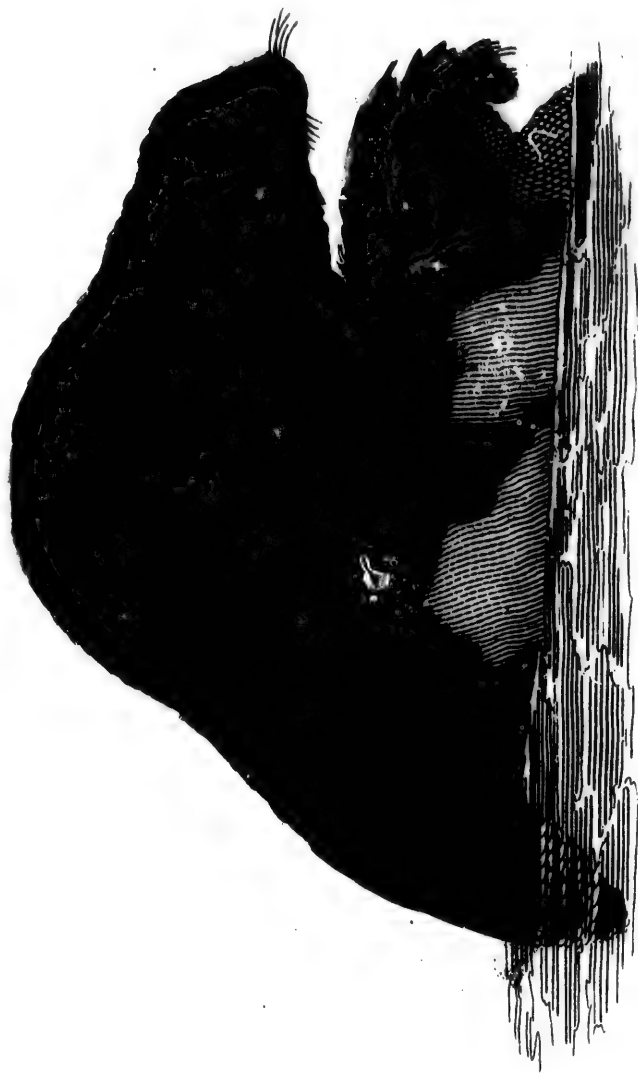
inhabits Brasil and Guiana, and lives in fenny places. It burrows under ground, grows very fat, and is esteemed a great delicacy in Brasil; even its skin is eat, like that of a pig. It eats its meat on the ground, not sitting up as some others of this genus do. It is a solitary timorous animal, and the prey of a vast number of enemies.

They are discovered by little dogs, who point out the places they lie in. The master digs over them; and when he comes near, transfixes them with a knife; otherwise they are apt to escape. When they have an opportunity, they will bite dreadfully. There is a variety of them quite white, found on the banks of the river St. Francis.

Mr. Pennant says, that in size this species measures only ten inches; but Buffon says they are larger than any rabbit. Speaking of one that was kept in France, "Though our animal," says he, "had not acquired his full growth, he was eighteen inches long in his natural contracted situation; but when he extended himself, he was near two feet. His head from the nose to the top of the front, was five inches; his eyes were about two inches distant. When upon his legs, his height before was seven inches; behind about nine inches and a half. The posterior part of the body measured nineteen inches and a half in circumference, the fore part only fourteen. Five longitudinal rows of white spots ran along the sides, and approached each other at the extremities. His tail was hardly visible. Upon search, we found a small button of two or three inches long." The count gives a pretty full account of the manner of living and acting of the above animal, which he kept in his house from the month of August, 1774, to the twenty-eighth of May, 1775; during all which period its size continued to augment. Provided with a wooden cage or box, it

remained perfectly tranquil during the day, especially when plentifully supplied with food. After feeding, he retired of his own accord to his box ; but when night approached, he discovered a violent inclination to get out. He was remarkably cleanly ; and when about to void his excrements, he always retired to the most private corner he could find. All obscure corners seemed agreeable to him. He would make himself a new nest in the bottom of an open press, or under the kitchen grate ; and nothing but force would make him leave his new abode. He was fond of adulation, and licked the hand of the person that caressed him. When gently stroked on the back, he stretched himself out, and lay down on his belly. His skin was so sensible, that the slightest touch was sufficient to excite the most lively emotions. This great sensibility produced sometimes the most violent paroxysms of passion. The bare sight of an unknown dog was sufficient ; he would dart suddenly on the dog, however innocent, and bite him severely. He was apt to treat people with whom he was not acquainted, in the same manner, if they tried to irritate him. He had an aversion to children, and pursued them. He expressed his passion by chattering his teeth. He often sat on his posteriors, and seemed to comb his head and whiskers with his paws, which he licked and moistened with his saliva. In this operation he often used both paws at a time, and would afterwards scratch all his body. He would eat bread equally well, whether it had been soaked in water, wine, or vinegar. When sugar or fruits were offered him, he expressed his joy by bounding and leaping. He ate, with equal relish, grapes, celery, onions, and garlic ; he did not refuse grass, moss, or the bark of trees. He would eat wood even half charred. He seemed to like flesh the least

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BEAVER

of any kind of food. He lapped like a dog. Mr. Buffon thinks he might be naturalized in France ; and imagines, the introducing him would be a valuable acquisition, as a single individual of this species would furnish as much good meat as seven or eight rabbits.

M. de la Borde says, that there are two or three species of the cavy, at Cayenne, which are said not to intermix. Some of them weigh from fourteen to twenty pounds, and others from twenty-five to thirty.

BEAVER TRIBE.

Of the present tribe, there are but two species that have been hitherto discovered, the common and the Chili beavers ; and even of these, it seems doubtful whether the latter ought not to be arranged with the otters.

The beavers have the front teeth in their upper jaw truncated, and excavated with a transverse angle ; and those of the lower jaw are transverse at the tips. There are four grinders on each side. The tail is long, depressed, and scaly ; and there are collar bones in the skeleton.

COMMON BEAVER.

THE beaver is a native of most of the northern parts of Europe and Asia, but is principally found in North America. There is some reason to suppose that it was once an inhabitant of Great Britain ; for Giraldus Cambrensis says that these animals

frequented the river Tievi, in Cardiganshire, and that they had, from the Welsh, a name, signifying "the broad-tailed animals." Their skins were valued by the laws of Howel Dda, in the tenth century, at the great sum of a hundred and twenty pence each; and they seem to have constituted the chief finery and luxury of those days.

The general length of the beaver is about three feet. The tail is oval, nearly a foot long, and compressed horizontally, but rising into a convexity on its upper surface; it is perfectly destitute of hair, except at the base, and is marked out into scaly divisions, like the skin of a fish. The hair is very fine, smooth, glossy, and of a chesnut colour, varying sometimes to black; and instances have occurred, in which these animals have been found white, cream-coloured, or spotted. The ears are short, and almost hidden in the fur.

Like birds, it has but one and the same vent for the emission of its excrements and its urine; a strange peculiarity, but which anatomists leave us no room to doubt of.

The beavers begin to assemble about the months of June and July, to form a society that is to continue for the greatest part of the year. They arrive in numbers from every side, and generally form a company of above two hundred. The place of meeting is commonly the place where they fix their abode, and this is always by the side of some lake, or river. If it be a lake in which the waters are always upon a level, they dispense with building a dam; but if it be a running stream, which is subject to floods and falls, they then set about building a dam, or pier, that crosses the river, so that it forms a dead water in that part which lies above and below. This dam, or pier, is often fourscore or a hundred feet long, and ten or twelve feet thick at the base. If we compare

the greatness of the work, with the powers of the architect, it will appear enormous ; but the solidity with which it is built is still more astonishing than its size. The part of the river over which this dam is usually built, is where it is most shallow, and where some great tree is found growing by the side of the stream. This they pitch upon as proper for making the principal part in their building ; and, although it is often thicker than a man's body, they instantly set about cutting it down. For this operation they have no other instrument but their teeth, which soon lay it level, and that also on the side they wish it to fall, which is always across the stream. They then fall about cutting off the top branches, to make it lie close and even, and serve as the principal beam of their fabric.

This dike, or causey, is sometimes ten, and sometimes twelve feet thick at the foundation. It descends in a declivity, or slope, on that side next the water, which gravitates upon the work in proportion to the height, and presses it with a prodigious force towards the earth. The opposite side is erected perpendicular, like our walls ; and that declivity, which, at the bottom, or basis, is about twelve feet broad, diminishes towards the top, where it is no more than two feet broad, or thereabouts. The materials whercof this mole consists, are wood and clay. The beavers cut, with surprising ease, large pieces of wood, some as thick as one's arm or thigh, and about four, five, or six feet in length, or sometimes more, according as the slope ascends. They drive one end of these stakes into the ground, at a small distance one from the other, intermingling a few with them that are smaller and more pliant. As the water however, would find a passage through the intervals or spaces between them, and leave the reser-

voir dry, they have recourse to a clay, which they know where to find, and with which they stop up all the cavities both within and without, so that the water is duly confined. They continue to raise the dike in proportion to the elevation of the water, and the plenty which they have of it. They are conscious, likewise, that the conveyance of their materials by land would not be so easily accomplished as by water ; and therefore they take the advantage of its increase, and swim with their mortar on their tails, and their stakes between their teeth, to the places where there is most occasion for them. If their works are, either by the force of the water, or the feet of the huntsmen, who run over them, in the least damaged, the breach is instantly made up ; every nook and corner of the habitation is reviewed, and, with the utmost diligence and application, perfectly repaired. But when they find the huntsmen visit them too often, they work only in the night time, or else abandon their works entirely, and seek out for some safer situation.

The dike, or mole, being thus completed, their next care is to erect their several apartments, which are either round or oval, and divided into three stories, one raised above the other ; the first below the level of the causey, which is for the most part full of water ; the other two above it. This little fabric is built in a very firm and substantial manner, on the edge of their reservoir, and always in such divisions or apartments as above-mentioned ; that, in case of the water's increase, they may move up a story higher, and be no ways inconvenienced. If they find any little island contiguous to their reservoir, they fix their mansion there, which is then more solid, and not so frequently exposed to the overflowing of the water, in which they are not able to continue for any length of time.

In case they cannot pitch upon so commodious a situation, they drive piles into the earth, in order to fence and fortify their habitation against the wind as well as the water. They make two apertures, at the bottom, to the stream ; one is a passage to their bagnio, which they always keep neat and clean ; the other leads to that part of the building where every thing is conveyed, that will either soil or damage their upper apartments. They have a third opening, or door-way, much higher, contrived for the prevention of their being shut up and confined, when the frost and snow has closed the apertures of the lower floors. Sometimes they build their houses altogether upon dry land ; but then they sink trenches five or six feet deep, in order to descend into the water when they see convenient. They make use of the same materials, and are equally industrious in the erection of their lodges as their dikes. Their walls are perpendicular, and about two feet thick. As their teeth are more serviceable than saws, they cut off all the wood that projects beyond the wall. After this, when they have mixed up some clay and dry grass together, they work it into a kind of mortar, with which, by the help of their tails, they plaister all their works, both within and without.

The inside is vaulted, and is large enough for the reception of eight or ten beavers. In case it rises in an oval figure, it is for the generality above twelve feet long, and eight or ten feet broad. If the number of inhabitants increase to fifteen, twenty, or thirty, the edifice is enlarged in proportion. We have been credibly informed, that four hundred beavers have been discovered to reside in one large mansion-house, divided into a vast number of apartments, that had a free communication one with another.

All these works, more especially in the northern parts, are finished in August, or September at farthest ; at which time they begin to lay in their stores. During the summer, they are perfect epicures ; and regale themselves every day on the choicest fruits and plants the country affords. Their provisions, indeed, in the winter season, principally consist of the wood of the birch, the plane, and some few other trees, which they steep in water, from time to time, in such quantities as are proportioned to the number of inhabitants. They cut down branches from three to ten feet in length. Those of the largest dimensions are conveyed to their magazines by a whole body of beavers ; but the smallest by one only : each of them, however, takes a different way, and has his proper walk assigned him, in order that no one labourer should interrupt another in the prosecution of his work. Their wood-yards are larger or smaller, in proportion to the number in the family ; and, according to the observation of some curious naturalists, the usual stock of timber for the accommodation of ten beavers, consists of about thirty feet in a square surface, and ten in depth. These logs are not thrown up in one continued pile, but laid one across the other, with intervals or small spaces between them, in order to take out, with the greater facility, but just such a quantity as they shall want for their immediate consumption, and those parcels only, which lie at the bottom in the water, and have been duly steeped. This timber is cut again into small particles, and conveyed to one of their largest lodges, where the whole family meet, to consume their respective dividends, which are made impartially, in even and equal portions. Sometimes they traverse the woods, and regale their young with a more novel and elegant entertainment.

Such as are used to hunt these animals, know perfectly well that green wood is much more acceptable to them than that which is old and dry ; for which reason they plant a considerable quantity of it round their lodgments ; and as they come out to partake of it, they either catch them in snares, or take them by surprise. In the winter, when the frosts are very severe, they sometimes break a large hole in the ice ; and when the beavers resort thither for the benefit of a little fresh air, they either kill them with their hatchets, or cover them with a large substantial net. After this, they undermine and subvert the whole fabric ; whereupon the beavers, in hopes to make their escape in the usual way, fly with the utmost precipitation to the water ; and plunging into the aperture, fall directly into the net, and are inevitably taken.

The beavers seldom quit their residence, unless they are disturbed, or their provisions fail. When they have continued in the same place three or four years, they frequently erect a new house annually ; but sometimes merely repair their old one. It often happens that they build a new house so close to the old, that they cut a communication from one to the other ; and this may have given rise to the idea of their having several apartments. When their houses are completely finished, they still carry on fresh works ; nor do they desist even when the pond is frozen over ; but continue their employment for some nights after, if the frost is not too severe, through a hole in the ice, which they keep open for the purpose.

During the summer, they forsake their houses, and ramble about from place to place ; sleeping under the covert of bushes, near the water-side. On the least noise, they betake themselves into the

water for security ; and they have sentinels, who, by a certain cry, give notice of the approach of danger. In the winter they never stir out, except to their magazines under the water ; and during that season, they become excessively fat.

At the head of one of the rivers of Louisiana, in a very retired place, M. Du Pratz found a beaver dam. Not far from it, but hidden from the sight of the animals, he and his companions erected their hut, in order to watch the operations at leisure. They waited till the moon shone pretty bright ; and then, carrying branches of trees in their front to conceal themselves, they went with great care and silence to the dam. Du Pratz ordered one of the men to cut, as silently as possible, a gutter, about a foot wide, through it ; and retire immediately to the hiding place.

“ As soon as the water through the gutter began to make a noise,” says our writer, “ we heard a beaver come from one of the huts and plunge in. We saw him get upon the bank, and clearly perceived that he examined it. He then, with all his force, gave four distinct blows with his tail ; when immediately the whole colony threw themselves into the water, and arrived upon the dam. When they were all assembled, one of them appeared, by muttering, to issue some kind of orders ; for they all instantly left the place, and went out on the banks of the pond in different directions. Those nearest to us were between our station and the dam, and therefore we could observe their operations very plainly. Some of them formed a substance resembling a kind of mortar ; others carried this on their tails, which served as sledges for the purpose. I observed that they put themselves two and two, and that each of a couple loaded his fellow. They trailed the mortar, which was pretty stiff, quite to the dam, where others were

stationed to take it ; these put it into the gutter, and rammed it down with blows of their tails.

" The noise of the water soon ceased, and the breach was completely repaired. One of the beavers then struck two blows with his tail ; and instantly they all took to the water without any noise, and disappeared."

M. du Pratz and his companions afterwards retired to their hut to rest, and did not again disturb these industrious animals till the next day. In the morning, however, they went together to the dam, to see its construction ; for which purpose it was necessary that they should cut part of it down. The depression of the water in consequence of this, together with the noise they made, roused the beavers again. The animals seemed much disturbed by these exertions ; and one of them in particular, was observed several times to come pretty near the labourers, as if to examine what passed. As M. du Pratz apprehended that they might run into the woods, if farther disturbed, he advised his companions again to conceal themselves.

" One of the beavers then ventured" continues our observer, " to go upon the breach, after having several times approached and returned like a spy. He surveyed the place ; and then struck four blows, as he did the preceding evening, with his tail. One of those that were going to work, passed close by me ; and as I wanted a specimen to examine, I shot him. The noise of the gun made them scamper off with greater speed than a hundred blows of the tail of their overseer could have done." By firing at them several times afterwards, they were compelled to run with precipitation into the woods. M. du Pratz then examined their habitations.

Under one of the houses he found fifteen pieces of wood ; with the bark in part gnawed off, appa-

rently intended for food. And round the middle of this house, which formed a passage for them to go in and out at, he found no less than fifteen different cells. These habitations were made by posts, fixed slanting upwards to a point; and in the middle was the floor, resting firmly on notches in the posts.

Notwithstanding all the sagacity and the extensive reasoning faculties of mankind, how often do we see their best-formed plans, their most dear and favourite contrivances fail, through some unlooked for event! We cannot then surely be surprised, when we are told, (as we are by one writer, in order to lessen our opinion of the sagacity of these animals,) that a community of beavers has in one or two instances, been starved to death, in consequence of a failure of provisions, or some want of foresight in fixing upon a spot that was found not to contain sufficient food to support them; or that they have sometimes established their colony in a flat situation, where a sudden thaw has swelled the water to such a height as to flood the whole place, wash away their food, and thus destroy them. To suppose them capable of judging of probabilities to so great an extent, would be to rank them in intellect with man. We must rather be astonished at the operations that we see them perform, than seek for them any higher situation than that in which they are placed.

Beavers bring forth their young towards the end of June; and generally have two at a time, which are, in nine instances out of ten, a male and a female. These continue with their parents till they are full three years old; when they pair off, and form houses for themselves. If, however, they are undisturbed, and have plenty of provisions, they remain with the old ones, and thus form a double society.

We cannot wonder that such sociable animals as the beavers are, should also exhibit great attachment to each other. Two young ones that were taken alive, and brought to a neighbouring factory in Hudson's Bay, were preserved for some time, and thrived very fast, till one of them was killed by an accident. The survivor instantly felt the loss, and starved itself to death by voluntarily abstaining from food.

Instances have occurred of beavers having been perfectly domesticated. Major Roderfort, of New York, related to Professor Kalm, that he had a tame beaver above half a year in his house, where he went about, quite loose, like a dog. The Major gave him bread; and sometimes fish, of which he was very greedy. As much water was put into a bowl as he wanted. All the rags and soft things he could meet with, he dragged into the corner where he was accustomed to sleep, and made a bed of them. The cat in the house, having kittens, took possession of his bed; and he did not attempt to prevent her. When the cat went out, the beaver often took the kitten between his fore paws, and held it to his breast to warm it, and seemed to doat upon it; as soon as the cat returned, he always restored to her the kitten. Sometimes he grumbled; but never attempted to bite.

The skin of the beaver has hair of two kinds; the lower, immediately next the hide, is short, implicated together, and as fine as down; the upper hair grows more sparingly, and is both thicker and longer. The former is of little value; but the flax, or down, is wrought into hats, stockings, caps, and other articles of dress.

The hunters prefer the winter season for seeking out the habitations of the beavers. They stop up the entrance to these, on the side next the water, with stakes; and enlarge the vent-hole,

which they find on the land side ; this is done for the purpose of putting through it a dog, who is so trained that he holds the beaver with his teeth, and suffers himself to be drawn out by his hind legs. The Indians about Hudson's Bay first drain off the water of the dam, and then, covering the houses with nets, break in at the top ; on which the affrighted beavers running through the door to escape, become entangled in the meshes. The hunters immediately seize and skin them.

In some parts of Lapland, beavers are caught in traps made of the twigs of fir-trees. The top of these the hunters fasten with a small branch of poplar, of which the animals are very fond. The beaver gnaws away this fastening, is let down, and caught. But it is remarked, that wherever two have been together, the one has always set the other at liberty.

Besides these associated beavers, there is another sort, called terriers, which either want industry or sagacity to form houses like the others. They burrow in the banks of rivers, making the mouth of their holes beneath the freezing depth of the water, and work up for a great number of feet. These also form a winter stock of provisions.

Beavers vary in their colours. The finest are black ; but the general colour is a chesnut brown, more or less dark. Some have been found, but very rarely, entirely white ; others spotted. Their skins are a prodigious article of trade, being the foundation of the hat manufactory. There were sold in a single sale of the Hudson's Bay company, in 1763, no fewer than fifty-four thousand, six hundred, and seventy skins. They are distinguished by different names. Coat beaver is what has been worn by the Indians ; parchment beaver has

its name from its resemblance to parchment ; but stage beaver is the worst, and is that which the Indians kill out of season in their stages or journeys.

The valuable drug castoreum, is taken from the inguinal glands of these animals. The Russian castoreum sells for two guineas a pound ; the American for eight shillings and sixpence only ; yet vast numbers of beaver skins are imported to Russia. Their flesh is reckoned good eating, being preserved after the bones are taken out, by drying it in the smoke.

The ancients had a notion that the castoreum was lodged in the testicles, and that the animal, when hard pursued, would bite them off and leave them to its pursuers, as if conscious of what they wanted to destroy him for.

CHILI BEAVER.

THIS is a species peculiar to South America, and appears to have been first described by Molina, in his Natural History of Chili. He informs us that it is found in the very deep lakes and rivers of that country, and feeds principally on fish and crabs.

Its length from nose to tail is about three feet ; the head is of a squarish form ; the eyes small ; the ears rounded and short, and the snout obtuse ; in each jaw are two sharp and strong cutting teeth, and the grinders are like those of the common beaver. The body is very broad, and covered, like the common beaver, with two sorts of hair ; the shortest or softest of which, is superior to that of most other quadrupeds, and is in high esteem with the manufacturers, being wrought into a kind of cloth, which has the softness of velvet ; and is also used in the manufacture of hats. The colour

of this animal is grey above and whitish beneath ; the toes of the fore feet are lobated, or bordered with a membrane, and the hind feet are webbed ; the toes are five in number on all the feet. The tail is of a compressed lanceolate form, and hairy. It is a bold, and even fierce animal, and has the power of continuing a great while under water. It does not construct any regular habitation like the common beaver, nor does it afford any castoreum. The female is said to produce from two to three young at a birth. It is called in Chili by the name of guillino.

RAT TRIBE.

THIS tribe contains all those animals which go under the denomination of murine quadrupeds ; and, although the term rat has been adopted, it includes not only the species that we know by the peculiar name of rats, but also the mice, and others called beaver rats.

These animals, in general, live in holes in the ground ; and are very swift, and able to climb trees. Their food is chiefly vegetable ; which most of them seek in the night, keeping in their retreats during the day. They feed in a somewhat upright position, carrying the food to their mouth in their fore paws. They are very prolific.

The front teeth are wedge-shaped. There are generally three grinders on each side, but sometimes only two. All the species have clavicles, or collar-bones, in the skeleton.

MUSK RAT.

THIS animal is about the size of a small rabbit. Its head is thick and short, and somewhat resembles that of a water-rat. The eyes are large; the ears short, rounded, and covered both inside and outside with hair. Its fur is soft, glossy, and of a reddish brown colour; and beneath this is a much finer fur, or thick down, which is very useful in the manufacture of hats. The tail is flattened laterally, and covered with scales.

Musk rats are found in America, from Hudson's Bay as far south as Carolina. In the general form of their body, as well as in many of their habits, they bear a considerable resemblance to the beaver. They construct their habitation of dry plants, but particularly of reeds, cement it with clay, and cover it with a dome. At the bottom and sides of this there are several pipes, through which they pass in search of food; for they lay up no provisions for winter. They have also subterraneous passages, into which they retreat whenever their houses are attacked.

Their habitations, which are intended only for the winter, are rebuilt annually. At the approach of this season they begin to construct them, as places of retirement from the inclemencies of the weather. Several families occupy the same dwelling, which is frequently covered many feet deep with snow and ice; the animals, notwithstanding, contrive to creep out, and feed on the roots that are also buried beneath. They feed too on the fresh water muscles; and when the season permits it, on fruit. Kalm, in his *American Travels*, says that apples are used as baits for them in traps. In winter the male and female are seldom seen far from each other.

During the summer they wander about, generally in pairs, feeding voraciously on herbs and roots. They walk and run in an awkward manner, like the beaver ; and cannot swim well, their feet being unfurnished with webs.

The musk rats, as well as the beavers, seem to have their drones, or terriers, which are at no trouble in the common operation of building houses. These burrow like water-rats, in banks adjacent to lakes, rivers, and ditches ; and often do much damage by admitting the water through the embankments of meadows.

They are remarkable for a strong musky smell ; whence they have their specific name. When tamed, they are very playful, and never bite. Their flesh is eaten by the Indians.

COYPU RAT.

THE first describer of this animal was Molina, who informs us that it is an inhabitant of the waters of Chili ; that it has the general appearance of an otter, being of the same size and colour ; but that in its teeth it agrees with the rat tribe ; the feet are each furnished with five toes ; those of the hind feet being connected by a web ; the ears are round ; the nose longish, and covered with whiskers ; and the tail thick, and flattish on the sides.

This animal lives occasionally on land, as well as water ; sometimes frequenting houses, and is easily tamed. The female produces five or six young at a birth.

PILORIS.

THIS species is found in India and the Indian islands, and in size nearly equals the guinea pig.

Its colour is whitish, with a cast of grey ferruginous on the back, and of cinereous on the abdomen; the tail is longish, nearly naked, scaly, and obtuse at the extremity. A variety of this animal is found in the American islands, which seems to differ from the above, in being of a darker colour on the back, and in having a much shorter tail. Perhaps it may be a distinct species; but the history of both seems, at present, not sufficiently clear, to enable us to determine this point.

GREAT RAT.

THE animal best known at present, and in every respect the most mischievous, is the great rat; which, though but a new comer into this country, has taken too secure a possession to be ever removed. This hateful and rapacious creature, though sometimes called the rat of Norway, appears to be utterly unknown in all the northern countries, and comes originally from India and Persia. Its first arrival was upon the coasts of Ireland, in those ships that traded in provisions to Gibraltar; and perhaps we owe to a single pair of these animals, the numerous progeny that now infests the whole extent of the British empire.

This animal, which is called by M. Buffon the surmalot, is in length about nine inches; its eyes are large and black; the colour of the head, and the whole upper part of the body, is of a light brown, mixed with a tawny and ash colour. The end of the nose, the throat and belly, are of a dirty white, inclining to grey; the feet and legs are almost bare, and of a dirty pale flesh colour; the tail is as long as the body, covered with minute dusky scales, mixed with a few hairs, and adds to the general deformity of its detestable figure. It is chiefly in the colour that this animal differs from

the black rat, or the common rat as it was once called ; but now common no longer. This new invader, in a few years after its arrival, found means to destroy almost the whole species, and to possess itself of their retreats.

But it was not against the black rat alone that its rapacity was directed ; all other animals of inferior strength shared the same misfortunes. The contest with the black rat was of short continuance. As it was unable to contend, and had no holes to fly to for a retreat, but where its voracious enemy could pursue, the whole race was soon extinguished. The frog also was an animal equally incapable of combat or defence. It had been designedly introduced into the kingdom of Ireland some years before the Norway rat ; and it was seen to multiply amazingly. The inhabitants were pleased with the propagation of a harmless animal, that served to rid their fields of insects ; and even the prejudices of the people were in its favour, as they supposed that the frog contributed to render their waters more wholesome. But the Norway rat soon put a stop to their increase ; as these animals were of an amphibious nature, they pursued the frog to its lakes, and took it even in its own natural element. The frog is said to be once more almost extinct in that kingdom ; and the Norway rat, having no more enemies left there to destroy, is grown less numerous also.

We are not likely, therefore, to gain by the destruction of our old domestics, since they are replaced by such mischievous successors. The Norway rat has the same disposition to injure us, with much greater power of mischief. It burrows in the banks of rivers, ponds, and ditches ; and is every year known to do incredible damage to those mounds that are raised to conduct streams, or to prevent rivers from overflowing. In these

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holes, which it forms pretty near the edge of the water, it chiefly resides during the summer, where it lives upon small animals, fish, and corn. At the approach of winter, it comes nearer the farm houses; burrows in their corn, eats much, and damages still more than it consumes. But nothing that can be eaten, escapes its voracity. It destroys rabbits, poultry, and all kinds of game; and, like the polecat, kills much more than it can carry away. It swims with great ease, dives with great celerity, and easily thins the fish pond. In short, scarce any of the feebler animals escape its rapacity, except the mouse, which shelters itself in its little hole, where the Norway rat is too big to follow.

These animals frequently produce from fifteen to thirty at a time; and usually bring forth three times a year. This great increase would quickly be found to over-run the whole country, and render our assiduity to destroy them fruitless, were it not, happily for us, that they eat and destroy each other. The same insatiable appetite that impels them to indiscriminate carnage, also incites the strongest to devour the weakest, even of their own kind. The large male rat generally keeps in a hole by itself, and is dreaded by its own species, as the most formidable enemy. In this manner the number of these vermin is kept within due bounds; and when their increase becomes injurious to us, it is repressed by their own rapacity.

But beside their own enmities among each other, all the stronger carnivorous quadrupeds have natural antipathies against them. The dog, though he detests their flesh, yet openly declares his alacrity to pursue them; and attacks them with great animosity. Such as are trained up to killing these vermin, dispatch them often with a single squeeze; but those dogs that show any hesitation, are sure to come off but indifferently; for the rat always

takes the advantage of a moment's delay, and instead of waiting for the attack, becomes the aggressor, seizing its pursuer by the lip, and inflicting a very painful and dangerous wound. From the inflammation, and other angry symptoms that attend this animal's bite, some have been led to think that it was in some measure venomous ; but it is likely that the difficulty of the wound's healing, arises merely from its being deep and lacerated by the teeth, and is rather a consequence of the figure of the instruments that inflict it, than any venom they may be supposed to possess.

The cat is another formidable enemy of this kind ; and yet the generality of our cats neither care to attack it, nor to feed upon it when killed. The cat is a more prudent hunter than the dog, and will not be at the pains to take, or combat with an enemy that is not likely to repay her time and danger. Some cats, however, will pursue and take the rat ; though often not without an obstinate resistance. If hungry, the cat will sometimes eat the head ; but, in general, she is merely content with her victory.

A foe much more dangerous to these vermin, is the weasel. This animal pursues them with avidity, and being pretty nearly of their own size, follows them into their holes, where a desperate combat ensues. The strength of each is pretty near equal : but the arms are very different. The rat, furnished with four long tusks at the extremity of its jaw, rather snaps than bites ; but the weasel, where it once fastens, holds, and continuing also to suck the blood at the same time, weakens its antagonist, and always obtains the victory. Mankind have contrived several other methods of destroying these noxious intruders ; ferrets, traps, and particularly poison ; but of all other poisons, the *nox vomica*, (Spanish nut,) ground and

mixed with meal, is said to be the most certain, as it is the least dangerous.

In the isle of France, rats are found in such prodigious swarms, that it is said the place was entirely abandoned by the Dutch on account of their number. In some of the houses they are so numerous, that thirty thousand have been known to be killed in a year. They make immense hoards under-ground, both of corn and fruit : and climb up the trees to devour the young birds. They pierce the very thickest rafters. At sun-set they may be seen running about in all directions ; and in a single night they will frequently destroy a whole crop of corn. M. de Saint Pierre says, he has seen a field of maize, in which they had not left a single ear. They are supposed to have been originally brought to that island in some of the European vessels.

On the return of the Valiant man of war, from the Havannah, in the year 1766, its rats had increased to such a degree, that they destroyed a hundred-weight of biscuit daily. The ship was at length smoked between decks, in order to suffocate them ; which had the desired effect, and six hampers were, for some time, filled every day with the rats that had thus been killed.

The following anecdote of a whimsical mode of clearing a house of these troublesome animals, may be new to many readers :—A gentleman travelling through Mecklenburg, about thirty years ago, was witness to a very singular circumstance in the post-house at New Stargard. After dinner, the landlord placed on the floor a large dish of soup, and gave a loud whistle. Immediately there came into the room, a mastiff, a fine Angora cat, an old raven, and a remarkably large rat with a bell about its neck. They all four went to the dish, and, without disturbing each other, fed together ; after

which the dog, cat, and rat, lay before the fire, while the raven hopped about the room. The landlord, after accounting for the familiarity which existed among these animals, informed his guest that the rat was the most useful of the four; for the noise he made had completely freed the house from the rats and mice with which it was before infested.

Pontoppidan says, that a short time previous to a fire, all the rats and mice that are in a house will instinctively forsake it.

Some of the Japanese tame these rats, and teach them to perform many entertaining tricks; and, thus instructed, they are exhibited as a show, for the diversion of the populace.

BLACK RAT.

THIS species is of a deep iron grey colour, nearly black. Its belly is cinereous; its legs dusky, almost naked. It has a claw in the place of a fifth toe on the fore feet. Its body measures seven inches; its tail near eight. It inhabits most parts of Europe. They are very destructive to corn, furniture, young poultry, rabbits, and pigeons. They will even gnaw the extremities of infants when asleep. They breed often in a year, and bring six or seven young at a time. They make their nest in a hole, often near a chimney, with wool, bits of cloth, or with straw. They will destroy and devour one another; but their greatest enemy is the weasel. They were carried into South America about the year 1544, by the Europeans, and are now become the pest of all that continent. The word *rattus*, or rat is modern. None of them are found in Siberia. They swarm at Otaheite, and others of the Society Islands, and are met with in New Zealand and New Holland. In Otaheite

they are so bold as to attack the inhabitants when asleep, who hold them in the utmost detestation, and will not even kill them, lest they should be polluted by the touch. They will not even eat the bread-fruit these animals should happen to run over.

These also are supposed to be Indian or Persian animals.

AMERICAN RAT.

THIS species is larger than the black, but less than the brown rat. Its upper jaw is much longer than the lower ; its head is long ; its nose narrow and pointed ; its ears large and naked ; its whiskers are fine, but long ; its tail is naked, and like that of the black rat, but not so long ; its colour is a deep brown, inclining on the belly to ash.

It burrows in the banks of rivers, and is supposed to extend from the lake Baikal to China, where it is very noxious. It bears a very striking resemblance to the common brown rat. It is supposed by Dr. Pallas to have migrated from the southern provinces of China, and also to inhabit North America.

WATER RAT.

THE water rat, the *mus amphibius* of Linnæus, has a thick blunt nose ; ears hid in its fur ; small eyes, and yellow teeth ; it has five toes on each foot ; the inner toe of the fore foot very small, and the first joint very flexible ; its head and body are covered with long hair, black, mixed with ferruginous ; its belly is of an iron grey ; its tail is covered with short black hair ; its lip is whitish ; its body measures seven inches ; its tail five ; it bears some resemblance to the beaver ; the

shape of its head and body is more compact than that of the former species.

It inhabits Europe, the north of Asia, and North America. Those of Canada vary to tawny and white. It burrows in the banks of rivers, ponds, and ditches ; feeds on small fish and fry, frogs, insects, and roots. It swims and dives admirably ; but while it preys on so many other fishes, it becomes itself the prey of the pike. It brings six young at a time. This animal and the otter, are eaten in France on meager days. It has sometimes a musky smell.

BANDICOTE RAT.

THIS is a very large species, being at least equal, if not superior, to a rabbit in size. In its shape and general appearance, it seems most to resemble the Norway rat. Its colour is a pale cinereous brown ; the ears thin, nearly bare, and rounded ; the snout rather long ; the fore feet shaped like those of the Norway rat, with four toes, and a claw in place of a fifth ; the hind feet have five toes, of which the two exterior are considerably shorter than the rest ; the tail is above eleven inches in length.

This species is said to be very common about the coasts of the Malabar country. At Pondicherry it is frequent, infesting houses like the brown rat. Its voice is said to resemble the grunting of a pig.

PERCHAL RAT.

THIS species is a native of India, and in its general appearance resembles the Norway rat, but is of a longer shape, with a thicker and shorter tail in proportion. It is of a deep ferruginous brown above,

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COMMON MOUSE.

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and of a greyish cast beneath ; the hind legs are larger than the fore ; the ears naked and rounded ; and the nose rather blunt.

This rat is said to be very numerous about Pondicherry, infesting houses in the same manner as the rats of Europe. It seems to have been first described by Mons Sonnerat, and is evidently allied to the bandicote rat. Both species are said to be occasionally eaten by the natives.

COMMON MOUSE.

ALMOST all animals are tamed more difficultly in proportion to the cowardice of their natures. The truly bold and courageous easily become familiar, but those that are always fearful are ever suspicious. The mouse being the most feeble, and consequently the most timid of all quadrupeds, except the guinea pig, is never rendered thoroughly familiar ; and, even though fed in a cage, retains a large portion of its natural apprehensions. In fact, it is to these alone that it owes its security. No animal has more enemies, and few so incapable of resistance. The owl, the cat, the snake, the hawk, the weasel, the rat itself, destroys this species by millions, and it only subsists by its amazing fecundity.

The mouse brings forth at all seasons, and several times in a year. Its usual number is from six to ten. These, in less than a fortnight, are strong enough to run about and shift for themselves. They are chiefly found in farmers' yards, and among their corn, but are seldom in those ricks that are much infested with rats. They generally choose the south-west side of the rick, from whence most rain is expected ; and from thence they often, of an evening, venture forth to drink

the little drops, either of rain or dew, that hang at the extremities of the straw. Aristotle gives us an idea of their prodigious fecundity, by assuring us, that having put a mouse with young into a vessel of corn, in some time after he found a hundred and twenty mice, all sprung from one original. The early growth of this animal implies also the short duration of its life, which seldom lasts above two or three years. This species is very much diffused, being found in almost all parts of the ancient continent, and having been exported to the new. They are animals that, while they fear human society, closely attend it; and, although enemies to man, are never found but near those places where he has fixed his habitation. Numberless ways have been found for destroying them; and Gesner has minutely described the variety of traps by which they are taken. Our Society for the Encouragement of Arts and Manufactures proposed a reward for the most ingenious contrivance for that purpose; and Goldsmith says he observed almost every candidate passing off descriptions as inventions of his own. He thought it was cruel to detect the plagiarism, or frustrate the humble ambition of those who would be thought the inventors of a mouse-trap.

They are diffused over America, but are believed to have been introduced from Europe. Their hair, when examined by the microscope, exhibits a very curious appearance.

FIELD MOUSE.

THE field mouse is well known in all the temperate parts of Europe; where it frequents dry and elevated fields or woods. The general length of its body is about four inches and a half; and the

tail is nearly four inches more. Its colour is yellowish brown above, and whitish on the under parts. The eyes are full and black.

These animals are found only in fields and gardens. They live in burrows, a foot or more under ground; where they lay up great quantities of acorns, nuts, and beech mast. According to Buffon, a bushel of such substances has been sometimes found in a single hole. These habitations are often divided into two apartments; the one for living in with their young, and the other for their provisions.

Often the little mouse,
Illudes our hopes; and, safely lodg'd, below
Hath form'd his granaries.

The nests of these little creatures may be discovered by the small heaps of mould thrown up at the entrance of their runs, which lead by winding paths to their magazine.

A very remarkable instance of sagacity in this animal, occurred to the Rev. Mr. White one day, as his people were pulling off the lining of a hot-bed, in order to add some fresh dung. From out of the side of this bed leaped something with great agility, that made a most grotesque figure, and was not without much difficulty taken; when it proved to be a large field mouse, with three or four young clinging to her teats by their mouths and feet. It was amazing that the desultory and rapid motions of the dam did not oblige her litter to quit their hold, especially when it appeared that they were so young as to be both naked and blind.

Field mice are very prolific; breeding more than once a year, and often producing litters of eight or ten at a time. They generally make the

nest for their young very near the surface of the ground, and often in a thick tuft of grass. They are said to do more mischief in France, than all the other animals and birds taken together.

HARVEST MOUSE.

THE Rev. Gilbert White seems to have been the first who examined this diminutive and slender species of mouse, which hitherto appears to have been only found in Hampshire. It is, he says, somewhat of a squirrel colour, with a white belly; having a straight line along the sides, dividing the shades of the back and belly.

One of the nests of these little animals he procured. It was most artificially platted, and composed of the blades of wheat; perfectly round, and about the size of a cricket-ball; with the aperture so ingeniously closed, that there was no discovering to what part it belonged. It was so compact and well filled, that it would roll across the table without being discomposed, though it contained eight young mice that were naked and blind. As this nest was perfectly full, how could the dam come at her litter respectively so as to administer a teat to each? Perhaps she opens the different places for that purpose, adjusting them again when the business is over; but she could not possibly be contained herself in the ball with her young, which, moreover, would be daily increasing in bulk. This wonderful procreant cradle, an elegant specimen of the efforts of instinct, was found in a wheat field, suspended in the head of a thistle.

Mr. White remarked, that though the harvest mice hang their nests above the ground, yet in winter they burrow deep in the earth, and make warm beds of grass; but their grand rendezvous

seems to be in corn-ricks, into which they are carried at harvest. This gentleman measured some of them ; and found that from nose to tail they were two inches and a quarter, and their tails two inches long. Two of them in a scale weighed down just one copper halfpenny, about the third of an ounce avoirdupois ; whence he supposes them to be the smallest quadrupeds in this island. A full grown domestic mouse would weigh at least six times as much as one of these.

LINEATED MOUSE.

THIS small and elegant species was first described by Sparrman, and is a native of the forest regions, on the Slangen river, a great way eastward, from the Cape of Good Hope. It is one of the least of the genus, being little more than two inches long, from nose to tail.

ORIENTAL MOUSE, &c.

THE oriental is about half the size of the common mouse. It is of a grey colour, and has rounded ears. Its back and sides are elegantly marked with twelve rows of small pearl-coloured spots, extending from the head to the rump. Its tail is as long as its body. It inhabits India. It is a doubtful species.

The Barbary mouse is also less than the common one ; of a brown colour ; marked on the back with ten pale stripes. It has three toes, with claws on the fore feet, and the rudiments of a thumb. Its tail is of the same length with the body.

The Mexican mouse is of a whitish colour, mixed with red. Its head is whitish ; each side of its belly is marked with a great reddish spot.

VIRGINIAN MOUSE.

The Virginian mouse has pointed ears ; a black pointed nose ; and long whiskers. Its fur is very short ; its limbs are very slender ; its tail very thick at the base, and all beset with long hair, tapers gradually to a point, and is very long and slender. The colour of this animal is universally white. The thickness at the base of the tail is its specific difference.

WANDERING MOUSE.

THIS species has an oblong head, a blunt nose, with a red tip, and yellow cutting teeth. Its eyes are placed midway between the nose and ears ; its ears are large, oval, and naked ; but dusky and downy at the tips ; its limbs are slender ; its tail is longer than the body, and very slender also ; its colour above is pale ash, mixed and waved with black ; with a black line along the back. The ends of its limbs are whitish. Its body and tail are each about three inches long. It inhabits the whole Tartarian desert. At certain times, they wander about in great flocks, migrating from place to place during the night. They are observed in birch woods as high as 57° North. They are of a very tender nature, soon become torpid, and sleep rolled up in a cold night, even in the month of June. They live in holes and fissures of rocks. The Tartars call it the gregarious mouse.

BIRCH MOUSE.

THE birch is still less than the wandering mouse. Like it, it is very tender, and soon grows torpid

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in cold weather. It inhabits the same countries, runs up trees, and fastens to the boughs with its tail. By the assistance of its slender fingers, it adheres to any smooth surface. It emits a weak note. It has a sharp nose, red at the point, like that of the former; but smaller ears, brown and bristly at the points. Its tail is very slender, prehensile, and much longer than its body; brown above, and white below. It has a dusky line also along the back.

RUSTIC MOUSE.

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THE rustic mouse has a sharp nose, an oblong head, small ears lined with fur. Its colour is ferruginous above, whitish beneath. Above each hind foot, it has a dusky circle. It is of a less size than the field mouse. Its tail is only half the length of its body. It is found in Germany, in the temperate parts of Russia, in villages and corn fields, and in the woods of Siberia. In Russia, it is called the corn mouse. At times they migrate in vast multitudes, and destroy the whole expectations of the farmer. In 1763 and 1764, this plague made great ravages in the rich country about Casan and Arsk. They came in such numbers, as to fill the very houses; and, through hunger, became so bold as to rob the tables of bread, before the faces of those who had sat down to eat it. At the approach of winter, they all disappeared,

They burrow, and form their retreats but little below the surface.

LITTLE MOUSE.

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The little mouse, the least of the genus, weighs not half a dram. It accompanies the former spe-

cies in corn fields, barns, and birch woods. It is said there are more males than females of this species, and that they seem to wander without having any certain place for their nests. They have sharpish noses, and small ears half hid in their fur, and are of a deep tawny colour above, white below, with grey feet.

ROCK MOUSE.

THE rock mouse is about four inches long ; its tail one and a half, having a few hairs scattered over it. Its head is oblong ; its nose rather pointed ; its ears rise above the fur ; and are oval and downy, with brown edges ; its whiskers are short ; its limbs are strong ; its colour is brown, slightly mixed with grey above ; its belly is of a light ash ; its snout dusky, with a very slender ring of white. It makes its burrows in a wonderful manner, between the fissures of rocks.

ŒCONOMIC MOUSE.

THE Œconomic mouse has small eyes ; naked ears hid in its fur ; strong limbs, and very tawny teeth. Its colour is black and yellow intimately mixed. It has a dark down beneath the hair ; the ends of its feet are dusky. It is about four inches and a quarter long ; its tail is rather more than an inch. In the form of its body, it resembles the meadow mouse ; but is rather longer, and has a bigger belly.

It inhabits all Siberia, especially its eastern parts, and Kamtschatka, in great numbers. It is even found within the arctic circle.

Dr. Pallas gave them the name of Œconomic mice from their curious way of living. They inhabit damp soils, and shun the sandy, and form

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burrows with many chambers and entrances. In their chambers they lay up store of provisions, collected with great pains in summer, from various plants, which they bring out of their holes in a sunny day, that they may dry them more effectually. During summer they never break upon their hoards, but live on berries, and other vegetable productions. In certain years they make great migrations out of Kamtschatka. They collect in the spring, and go off in incredible multitudes. Like the lemmus, they go on in a direct course, and neither rivers nor arms of the sea stop their progress. In their passage through the watery element, numbers of them fall a prey to ravenous fishes. But on land they are safe; for the people of Kamtschatka have a superstitious veneration for them, and are so far from hurting them, that if they find any of them lying faint from fatigue or hunger, they give them all possible assistance. On their return from a migration, expresses are sent to all parts with the glad news. When the natives rob them, they never take away all their store, but leave them something to subsist on.

BLUE RAT.

THIS is a species described by Molina, in his History of Chili, of which country it is a native, and is about the size of the wood rat, and of a fine pale blue colour, with rounded ears. It inhabits subterraneous burrows, which it forms of the length of many feet, and on each side of which are several holes, or receptacles, in which it deposits its winter provisions, consisting chiefly of tuberous roots, &c. It is a timid animal, and is said to be very cleanly. It breeds twice a year, producing six at a time. The peasants of Chili

frequently rob the subterraneous retreats of this species, of the hoards which they contain.

SCHERMAN RAT.

THIS species is said to be common about the neighbourhood of Strasburg, and appears to have been first described by Mr. Hermann, who, in the year 1776, communicated a specimen to Count de Buffon. The length of the animal from nose to tail, is six inches ; of the tail, about two inches and three quarters ; the head is rather short ; the snout thick ; the eyes small, and the ears almost as short as those of a mole, and concealed beneath the fur. The general colour of the fur is a blackish brown, mixed with grey tawny towards the tip ; the edges of the mouth are bordered with short hairs, and the whiskers are black ; the under parts of the body are of a mouse grey ; the legs, which are short, are covered with dusky hair, as are also the feet, which are very small ; the tail is hairy, but not so well covered as that of the water rat. This animal resides in watery places, and about the gardens at Strasburg, and is said to be very destructive to the plants in cultivated grounds. It swims and dives extremely well, and also burrows occasionally under-ground.

RED MOUSE.

THE red mouse is not quite four inches long ; its tail above one, and full of hair ; its nose and face are very bristly ; its back is of an uniform, pleasant, tawny red ; its sides are light grey and yellow. The underside of the body is whitish ; its feet are also white.

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PL. 12

LEMING-G-RAT

PLATE



Kamtschatka, in woods and mountains. It is also found within the arctic circle. They wander out the whole winter, and are very lively even amidst the snows. They eat any thing that comes in their way. They have been sometimes seen in Germany.

GARLIC MOUSE.

THE garlic mouse is frequent in magazines of bulbous roots formed by the peasants of Siberia; especially in those formed of angular garlic. It has great open naked ears; its tail is clothed with hair. The colour of its back is cinereous, mixed with long hairs, tipped with a dusky grey; its sides are of a light ash; its breast, belly, and feet, are white; its body is four inches; its tail one and a half.

SORICENE MOUSE.

THE soricene mouse, found in the neighbourhood of Strasbourg, is of a yellowish grey on the upper parts of the body, with a white belly. Its nose is a little extended; it has four toes before, five behind, round ears, a tail of a middling length, and covered with hair.

LEMMUS.

THE lemmus, or lemming, has two very long cutting teeth in each jaw, a pointed head, and long whiskers. Its eyes are small and black; its mouth is small; its upper lip divided; its ears are small and blunt, reclining backwards; its fore legs are very short, with four slender toes on each, covered with hair; and in the place of a thumb, it has a short claw, like a cock's spur; it has five toes behind; its skin is very thin; its head and

body are black and tawny, disposed in irregular blotches ; its belly is white, tinged with yellow ; its length is about five inches ; its tail one and a half. Those of Russian Lapland are much less than those of the Norwegian or Swedish. They appear in numberless troops, at very uncertain periods, in Norway and Lapland, and are at once the pest and wonder of the country. They march, like the army of locusts so emphatically described by the prophet Joel, destroy every root of grass before them, and spread universal desolation.

They seem to be endowed with a power of distinguishing the approach of severe weather ; for before the setting in of a cold winter, they leave their haunts in the above countries, and emigrate in immense multitudes southwards towards Sweden, always endeavouring to keep a direct line. These emigrations take place at uncertain intervals, though generally about once every ten years ; and, exposed as the travellers are to attack, they of course become the food of all the predacious animals. Multitudes also are destroyed in endeavouring to swim over the rivers or lakes. From these different causes, very few of them live to return to their native mountains ; and thus a check is put to their ravages, as an interval of several years is necessary to repair their numbers sufficiently for another invasion. They are bold and fierce, and will even attack men and animals, if they meet them in their course ; and they bite so hard, as to allow themselves to be carried to a considerable distance hanging by their teeth, before they will quit their hold.

If they are disturbed or pursued while swimming over a lake, and their phalanx is separated by oars or poles, they will not recede ; but keep swimming directly on, and soon get into regular order again. They have sometimes been known

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even to endeavour to board, or pass over a vessel. This army of rats moves chiefly by night, or early in the morning; and makes such destruction among the herbage, that the surface of the ground over which they have passed, appears as if it had been burned. Their numbers have at times induced the common people of Norway to believe that they had descended from the clouds; and the multitudes that are sometimes found dead on the banks of rivers, or other places, corrupt by their stench the whole atmosphere around, and thus produce many diseases. They are even thought to infect the plants which they gnaw; for cattle turned into pastures where they have been, are said frequently to die in consequence.

They never enter dwellings of any description, to do mischief: but always keep in the open air. When enraged, they raise themselves on their hind feet and bark like little dogs. Sometimes they divide into two parties, attack each other, and fight like hostile armies. From these battles, the superstitious of the inhabitants of Sweden and Lapland pretend to foretel not only wars, but also their success, according to the quarters the animals come from, and the side that is defeated.

The females breed several times in a year, and produce five or six at once. It has been observed, that they have sometimes brought forth during their migrations; and they have been seen carrying some their young in their mouths and others on their backs. The flesh of the lemmings is not used as food. The hair is very fine, but too thick to be of value as a fur.

They feed on grass, on the rein-deer liverwort, and the calkins of the dwarf birch. The first they get under the snow, beneath which they wander during winter. Where they make their lodgements, they have a spiracle to the surface for the

sake of air. In these retreats they are eagerly pursued by the Arctic foxes.

They make also very shallow burrows under the turf; but do not form any magazines for winter provision; by this improvidence, it seems, they are compelled to migrate, urged by hunger to quit their usual residence.

They are the prey of foxes, lynxes, and ermines, who follow them in great numbers. In former times, the priests exorcised them in a long set form of prayer.

RINGED RAT.

THE ringed rat has a blunt nose; ears hid in its fur; legs strong and short; soles covered with hair; claws very strong, and hooked at the end, and very fine hair all over the body; of a ferruginous colour, mixed with yellow; sometimes pale grey, clouded, or waved with a dusky rust colour. From the ears, down each side of the head, there is a dusky space; and behind that, a stripe of white; so that the neck appears to be encircled with a collar; behind which there is another dusky one. The body is three inches long; the tail one. At its end there is a tuft of hard bristles. It inhabits the northern parts about the Obi; burrows with many passages beneath the turfy soil; and lines its nest with rein-deer and snow liverwort. They are said to migrate at the same seasons with the lemmus.

HUDSON'S BAY RAT.

THE Hudson's Bay rat has slender brown whiskers; very fine, long, soft hair; ash, tinged with tawny, on the back, with a dusky stripe running along its middle; and along each side a pale

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tawny line. Its belly is of a pale ash-colour; its limbs are very short; its fore feet very strong. The two middle claws of the male are very strong, thick, and compressed at the end. Its tail is very short, terminated by some stiff bristles. The body is about five inches long. It inhabits Labrador.

WOOLLY MOUSE.

THE woolly mouse, is a South American species, and is a native of Chili, where it resides in subterraneous retreats, in a gregarious manner, and feeds on various kinds of roots. It breeds twice a year, bringing five or six at a time. It is said to be of a very mild and gentle disposition, very easily tamed, and often rendered domestic. The ancient Peruvians are said to have manufactured various valuable articles from its fur, which is of a woolly nature, long, and of exquisite fineness. This species is of a cinereous colour, and measures about six inches; the ears are very small; the nose short, and the tail of middling length.

BAIKAL MOUSE.

THIS species is a native of Siberia, and forms its nest beneath turfy ground, with several minute entrances. It is supposed to feed chiefly on the roots of the *lilium pomponium*, and *allium tenuissimum*, which it collects for its winter provision. The male and female, together with the young of one year's age, reside in the same retreat. This species is not observed to migrate. It varies in size; and the males are in general much smaller than the females. The usual length seems to be about four inches, and the tail about an inch and half; but some of

62 HARE-TAILED RAT, AND SOCIAL MOUSE.

the males do not exceed three inches, from nose to tail.

HARE-TAILED RAT.

THIS species has a long head, and a blunt nose ; lips rough and swelling out ; and ears short, round, and flat. Its tail is the shortest of any of the genus, scarce appearing out of the hair ; its fur is very soft and full, ash mixed with dusky, with a dark line along its back ; its body is between three and four inches long. It inhabits the country about the Yaik, the Irtish, and the Jenesey. They love a firm, dry soil ; burrow, and make two entrances, the one oblique, the other perpendicular.

The males fight for the females, and devour each other. They are very salacious. When in heat, they emit a musky smell. They bring six at a time. Like the marmots, they are slow in their motions, and sleep rolled up like them. They are very fond of the dwarf iris ; but feed on all sorts of seeds. They also migrate in great troops ; and the Tartars call them the rambling mouse.

SOCIAL MOUSE.

THE social mouse has a thick head ; a blunt nose ; naked oval ears ; short strong limbs ; and a slender tail. The upper part of the body is of a light grey, palest on the sides ; the shoulders and belly are white ; the body is above three inches ; the tail one and a half. It inhabits the Caspian desert, and the country of Hyrcania. They live in low, sandy, grassy places, in great societies. Their burrows are about a span deep,

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with eight or more passages. They are always found either in pairs, or with a family. They rarely appear in autumn : but swarm in the spring. They are said to migrate, or change their place in autumn, or to conceal themselves among the bushes ; and in winter to shelter themselves in hay ricks. They breed later than the other kinds ; feed much on tulip roots ; and are the prey of weasels, crows, and vipers.

MEADOW MOUSE.

THE meadow mouse or rat, the *mus terrestris* of Linnæus, has a large head ; a blunt nose ; short ears hid in its fur ; prominent eyes ; and a short tail. The head and body are ferruginous, mixed with black ; its belly a deep ash colour ; its feet dusky ; its body is six inches long ; its tail one and a half, covered with hair, and tufted.

It inhabits Europe. It is also found in great abundance in Newfoundland, where it does much mischief in the gardens. In England it makes its nest in moist meadows ; brings eight young at a time, and has a very great affection for them. It resides under ground, and lives on nuts, acorns, and corn.

HAMSTER.

THE hamster is about the size of the brown or Norway rat ; but much thicker, and its tail only about three inches long. Its colour is reddish brown above, and black beneath ; but on each side of the body, there are three large oval white spots. The ears are rather large. On each side of the mouth are two receptacles for food ; which, when empty, are so far contracted, as not to appear externally ; but when filled, they resemble a

pair of tumid bladders, with a smooth veiny surface, which is concealed by the fur of the cheeks.

These, the only species of the pouched rats found in Europe, are inhabitants of Austria, Silesia, and many parts of Germany. They live under ground, burrowing down obliquely. At the end of their passage, the male sinks one perpendicular hole; and the female several, sometimes seven or eight. At the extremity of these are formed various vaults; either as lodges for themselves and young, or as store-houses for their food. Each young one has its separate apartment; and each sort of grain its appropriate vault; the former are lined with straw or grass. The vaults are of different depths, according to the age of the animals. A young hamster makes them scarcely a foot deep; an old one sinks them to the depth of four or five feet. The whole diameter of the habitation, with all its communications, is sometimes eight or ten feet.

The male and female have always separate burrows; for, except in their short season of courtship, they have no intercourse. The whole race are so malevolent, as constantly to reject all association. They will fight, kill, and devour each other. The female shews little affection even for her young; for if any person digs into the hole, she attempts to save herself by burrowing deeper into the earth, leaving them a prey to the intruder. They would willingly follow her, but she is deaf to their cries, and even shuts up against them the hole which she has made.

The hamsters feed on grain, herbs, and roots; and, at times, even eat flesh. Their pace is extremely slow; but in burrowing in the ground they exhibit great agility. Not being formed for long journeys, their magazines are first stocked with such provisions as are nearest to their abode;

which accounts for some of their chambers being filled with only one species of grain. After the harvest is reaped, they, from compulsion, go to greater distances in search of provisions, and carry to their storehouses whatever eatables they can lay hold of.

To facilitate the transportation of food to their hoards, nature has provided them with pouches in their cheeks. These, in the inside, are furnished with many glands, which secrete a certain fluid, that preserves the flexibility of the parts. They are each capable of containing about two ounces of grain; which the animal empties into its granary, by pressing its two fore feet against its cheeks. When its cheeks are full, it may easily be caught with the hand, without the risk of being bitten; as it has not, in this condition, the free motion of its jaws. If, however, a short time is allowed, it soon empties its pouch, and stands on the defensive.

On dissecting one of these animals, Dr. Russel found the pouch, on each side of its mouth, stuffed with young French beans, arranged lengthways, so exactly and close to each other, that it appeared strange by what mechanism this had been effected; for the membrane which forms the pouch, though muscular, is extremely thin, and the most expert fingers could not have packed the beans in more regular order. When they were laid loosely on the table, they formed a heap three times the bulk of the animal's body.

What these creatures lay up, is not for their winter's support, since, during that season, they always sleep; but for their nourishment previously to the commencement, and after the conclusion, of their state of torpidity. The quantity in their burrows depends upon the size and sex of the inhabitants; the old ones frequently amassing upwards of a

hundred-weight of grain, but the young and the females providing a quantity much smaller.

At the commencement of the cold season, the hamsters retire into their hiding places, the entrances to which they close up. Here they repose for some months ; and in this state they are often dug up by the peasantry, who at this season of the year employ much of their time in hunting for their retreats. These are easily known by the small mounds of earth raised at the end of the galleries. Here the men dig till the hoard is discovered ; which often consists of a bushel, or a bushel and a half of corn ; and they are farther rewarded by the skins of the animals, which are esteemed valuable furs.

In some seasons, the hamsters are so numerous, that they occasion a dearth of corn. In one year about eleven thousand skins, in a second fifty-four thousand, and in a third year eighty thousand, were brought to the town-house of Gotha, as vouchers of claims to the rewards allowed for the destruction of the animals.

The hamster sleeps during the winter ; and though neither respiration nor any kind of feeling can be perceived in this state, yet the heart has been discovered (by opening the chest) to beat fifteen times in a minute. The blood continues fluid, but the intestines are not irritable ; and, in the open air, he does not become torpid. When found in a state of torpidity, his head is bent under his belly, between the two fore legs ; and the hind legs rest upon his muzzle. The eyes are closed ; and when the eye-lids are forced open, they instantly shut again. The members are all stiff, and the body feels as cold as ice ; and if he is even dissected in this state, his lethargy is too strong to admit of his waking entirely.

The stupor of the hamster has been ascribed

solely to a certain degree of cold ; but experience has proved, that to render him torpid, he must also be excluded from all communication with the external air ; for when one of them is shut up in a cage filled with earth and straw, and exposed in winter to a degree of cold even sufficient to freeze water, he never becomes so. But when the cage is sunk four or five feet under-ground, and well secured against the access of air, at the end of eight or ten days he is as torpid as if he had been in his own burrow. If the cage is brought up to the surface, he will awake in a few hours ; and resumes his torpid state when put below the earth again.

When the animal is passing from a state of torpidity, his actions are very singular. He first loses the rigidity of his members ; and then makes profound respirations, but at long intervals. His legs begin to move ; he opens his mouth, and utters disagreeable and rattling sounds. After continuing these operations for some time, he opens his eyes, and endeavours to raise himself on his legs. But all these movements are still reeling and unsteady, like those of a man intoxicated with liquor ; he, however, reiterates his efforts, till he is at length able to stand on his legs. In this attitude he remains fixed ; as if he meant to reconnoitre, and repose himself after his fatigue. But he gradually begins to walk, to eat, and to act in his usual manner. This passage from a torpid to an active state, requires more or less time, according to the temperature of the air. When exposed to a cold air, he sometimes requires above two hours to awake ; but in a more temperate air, he accomplishes his purpose in less than one.

These animals are very fierce ; they will jump at a horse if he happens to tread near them ; and

will hang by his nose in such a manner, that it is difficult to disengage them. They make a noise like the barking of a dog. In some seasons they are so numerous as to occasion a dearth of corn, and on that account are proscribed. But polecats are their greatest enemies, for they pursue them into their holes, and destroy numbers. It is remarkable, that the hair sticks so close to the skin, as not to be plucked off but with the utmost difficulty.

YAIK.

THE Yaik has a thick snout, a blunt nose, and very fleshy lips; its upper lip is divided; its upper fore teeth are small, yellow, convex, and truncated; the lower slender and pointed; its eyes are large; its naked ears stand up high above its fur; its tail is short and cylindrical; its face is white; its body, four inches long, is of a cinereous yellow, mixed with brown above, below of a hairy whiteness. It inhabits the deserts of Siberia, about the Yaik, quits its burrow, and runs about during the night.

ASTRICAN MOUSE.

THE Astrican mouse has its forehead much elevated; the edges of its eye-lids are black; its ears are naked and oval, standing far out of the fur; it is of a hoary ash-colour, with dusky hairs above; its sides whitish; the under side of the body, and the extremities of its limbs, are of a snowy whiteness; it is about three inches and a half long, and inhabits the deserts of Astracan, and the Hyrcanian mountains. About the Persian villages in Hyrcania, it commits great ravages among the rice. It does not grow torpid during the winter.

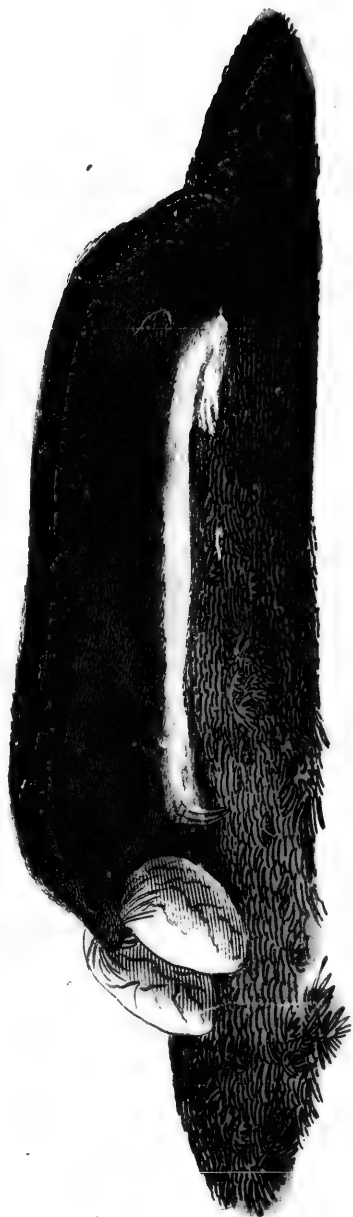
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CANADA RAT.

THIS, which is a species but lately discovered, seems to be the most remarkable of all the pouched rats, for the proportionable size of the receptacles. It is a native of Canada, and the individual here figured, was taken by some Indians, in the year 1798, and afterwards presented the lady of Governor Prescott. It is about the size of a brown Norway rat, and is of a pale greyish brown colour, rather lighter beneath; the length to the tail is about nine inches; and that of the tail, which is but slightly covered with hair, about two inches; the legs are short; the fore feet strong, and well adapted for burrowing in the ground, having five claws, of which the three middle ones are very large and long; the interior much smaller, and the exterior very small, with a large tubercle, or elbow beneath it. The claws on the hind feet are comparatively very small, but the two middle are larger than the rest, and the interior one is scarce visible; the teeth are extremely strong, particularly the lower pair, which are much longer than the upper; the ears are very small. The manners of this species are at present unknown; but it may be concluded, it lays in a stock of provision, either for autumnal, or winter food. The pouches of the individual specimen, above described, when first brought to Governor Prescott, were filled with a kind of earthy substance; it is therefore not improbable that the Indians who caught the animal, might have stuffed them thus, in order to preserve them in their utmost extent.

SAND RAT.

THE sand rat has a sharp nose, very large pouches, great oval brown ears, white nails, and a short hoary body; its sides, belly, limbs, and tail, are of a pure white; it is four inches long; its tail above one; it inhabits, and burrows in the sandy plains near the river Irtysh, in Siberia. It is a nocturnal animal.

SONGAR.

THE songar is of a grey colour; has a thick head, and a blunt nose; its ears are oval, very thin, and lightly covered with a hoary down; its tail is short, blunt, thick, and hairy. A black line runs along its back; its sides are spotted with white; its belly and legs are white. They are found in the same country with the sand rat. Dr. Pallas kept some of them a great while. They grew familiar, would feed from his hand, lap milk, and, when placed on a table, shewed no desire of running away. They were slower in all their motions than the other species; washed their faces with their paws, and sat up to eat; wandered about during the day, and slept all night rolled up. They seldom made any cry; and, when they did, it was like that of a bat. It is a native of Siberia.

BARABA RAT.

THE Baraba rat, about three inches and a quarter long, has a sharp nose, large, broad, naked ears, of a dusky colour, edged with white. It is of a cinereous yellow above, below of a dirty white. A black line extends from the neck

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to near the tail ; the tail, near one inch long, is white, marked with a dusky line.

They inhabit the sandy plain of Baraba, towards the Oby ; and about the lake Dalai, in the Chinese empire.

BLIND RAT.

THIS rat has a ^{grey} ^{head}, broader than the body, and not the least appearance for eyes ; yet beneath the skin are found what may be called the rudiments of those organs, though not larger than the seed of a poppy. It has no external ears ; the end of its nose is covered with a thick skin ; its nostrils are remote and placed below ; its mouth gapes, and the teeth are exposed ; those above are short ; the lower ones are very long, and their ends are quite uneven ; its body is cylindrical ; its limbs short ; it has five toes on each foot, with short claws ; its hair is short, thick, and soft ; dusky at the bottom, grey above, white about the mouth and nose. It is between seven and eight inches long. A male one will weigh above eight ounces.

It inhabits the southern parts of Russia, from Poland to the Wolga. It delights in moist and turfy soils. The earth it throws up in hillocks of two yards in circumference. It works with great agility. On any apprehension of an enemy, it forms instantly a perpendicular burrow. Its bite is very severe. When irritated, it snorts and gnashes its teeth, but emits no cry. It often quits its hole, especially in the morning, and during the amorous season, along with the female, to bask in the sun. In Ukraine, the vulgar believe that the touch of a hand which has suffocated this animal, has the same virtue in curing the king's



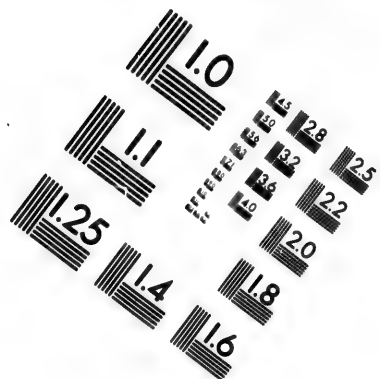
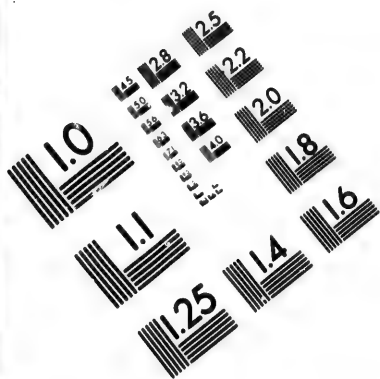
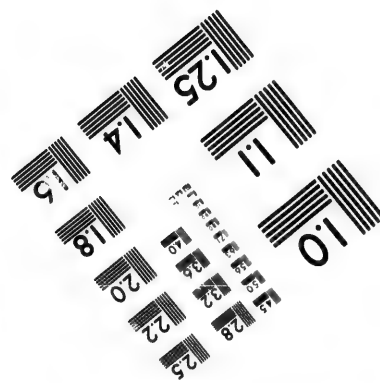
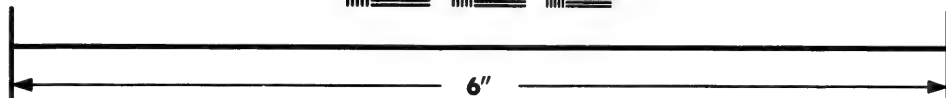
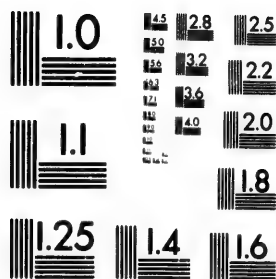
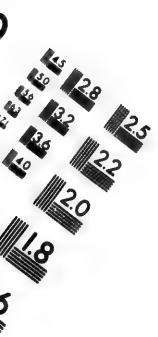


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evil, as was once believed to be inherent in the now abdicated royal family of Great Britain.

DAURIAN RAT.

THIS creature has a thick flat head, a short snout, and a blunt nose. Its upper fore teeth are naked ; a moveable lip covers the lower ; it has no external ears ; its eyes are very small, yet visible ; its body is short and depressed ; its limbs are very strong, especially the fore legs ; its tail is short ; its hair soft and loose, of a greyish colour. They measure from six to nine inches ; inhabit the arctic mountains, and beyond lake Baikal ; burrow a little below the surface ; have a voice weak and plaintive.----The Russians call it the earth bear.

AFRICAN RAT.

THE African rat has a large head, a black nose, flat and corrugated ; its eyes are minute, and much hid in the fur ; it has no ears ; its tail, about two inches long, is compressed, and covered above and below with short hair, and edged with bristles disposed horizontally. It is of a cinereous brown, palest on the lower parts, and about thirteen inches long.

It inhabits the sandy country near the Cape of Good Hope ; it burrows, and makes the ground so hollow as to be very inconvenient for travellers ; for it breaks every six or seven minutes under the horses feet, and lets them in up to the shoulders. It grows to the size of a rabbit, and is, by some, esteemed a good dish.

CAPE RAT.

THE Cape rat is about seven inches long, and is very destructive to the gardens about the Cape. Its tail is very short, beset with bristles. Though the rest of its nose is white, yet the end of it is naked and black. Its head, checks, back, and sides, are of a rusty brown; but it has a white space round its eyes and ears.

TALPINE RAT.

THE Talpine rat, about four inches long, has a large short head, and a thick truncated snout. Its upper teeth are long and flat, extending out of its mouth; its eyes are small, hid in its fur; its ears are bounded by a small rim; its tail scarce appears without the fur; its upper parts are dusky; its chin, belly, and limbs are whitish.

It inhabits the open grounds of the temperate parts of Russia and Siberia; it loves a black turfy soil, and is frequent in meadows near villages. Its manners resemble these of the mole. They do not become torpid in the winter; but make their nest deep in the ground, and keep themselves warm by lining it with soft grass. They are very easily taken, but soon grow sick in confinement, unless a quantity of earth is put into the place where they are kept. They are in heat at the end of March or beginning of April; the females have then a strong musky smell; they bring three or four at a time. They vary in colour; some are found quite black.

MARMOT TRIBE.

THE marmots have two wedge-shaped front teeth in each jaw ; and five grinders on each side in the upper, and four in the lower. They have also collar bones in the skeleton.

This tribe, of which only eight species are yet known, does not differ in many particulars from that of the rats. The animals have thick cylindrical bodies, and large roundish heads. The fore feet have four claws, and a very small thumb ; and the hind feet five claws. They reside in subterraneous holes, and pass the winter in sleep.

ALPINE MARMOT.

THE Alpine marmot frequents the highest summits of the Alps and Pyrenean mountains, and is also found in some parts of Asia. It is about sixteen inches in length, has a short tail, and bears some resemblance both to the rat and the beaver. The colour is brownish above, and bright tawny on the under parts. The head is rather large, and flattish ; the ears short, and hid in the fur ; and the tail thick and bushy.

The Alpine marmot, when taken young, is tamed more easily than any other wild animal, and almost as perfectly as any of those that are domestic. It is readily taught to dance, to wield a cudgel, and to obey the voice of its master. Like the cat, it has an antipathy to the dog ; and when it becomes familiar to the family, and is sure of being supported by its master, it attacks and bites even the largest mastiff. From its squat, muscular make, it has great strength, joined to great agility. It

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has four large cutting teeth, like those of the hare kind, but it uses them to much more advantage, since in this animal, they are very formidable weapons of defence. However, it is in general a very inoffensive animal; and, except its enmity to dogs, seems to live in friendship with every creature, unless when provoked. If not prevented, it is very apt to gnaw the furniture of a house, and even to make holes through wooden partitions; from whence, perhaps, it has been compared to the rat. As its legs are very short, and made somewhat like those of a bear, it is often seen sitting up, and even walking on its hind legs in like manner; but with the fore paws, as was said, it uses to feed itself in the manner of a squirrel. Like the hare kind, it runs much swifter up hill than down; it climbs trees with great ease, and runs up the cliffs of rocks, or the contiguous walls of houses, with great facility. It is ludicrously said, that the Savoyards, who are the only chimney-sweepers of Paris, have learned this art from the marmot, which is bred in the same country.

These animals eat indiscriminately of whatever is presented to them; flesh, bread, fruits, herbs, roots, pulse, and insects. But they are particularly fond of milk and butter. Although less inclined to petty thefts than the cat, yet they always try to steal into the dairy, where they lap up the milk like a cat, purring all the while like that animal, as an expression of their being pleased. As to the rest, milk is the only liquor they like. They seldom drink water, and refuse wine. When pleased, or caressed, they often yelp like puppies; but when irritated, or frightened, they have a piercing note that hurts the ear. They are very cleanly animals, and, like the cat, retire upon necessary occasions; but their bodies have a disagreeable

scent, particularly in the heat of summer. This tinctures their flesh, which, being very fat and firm, would be very good, were not this flavour always found to predominate.

We have hitherto been describing affections in this animal which it has in common with many others ; but we now come to one which distinguishes it from most other quadrupeds ; this is, its sleeping during the winter. The marmot, though a native of the highest mountains, and where the snow is never wholly melted, nevertheless seems to feel the influence of the cold more than any other, and in a manner has all its faculties chilled up in winter. This extraordinary suspension of life and motion for more than half a year, deserves our wonder, and excites our attention, to consider the manner of such a temporary death, and the subsequent revival. But first to describe, before we attempt to discuss.

The marmot, usually at the end of September or the beginning of October, prepares to fit up its habitation for the winter, from which it is never seen to issue till about the beginning or middle of April. This animal's little retreat is made with great precaution, and fitted up with art. It is a hole on the side of a mountain, extremely deep, with a spacious apartment at the bottom, which is rather longer than it is broad. In this several marmots can reside at the same time, without crowding each other, or injuring the air they breathe. The feet and claws of this animal seem made for digging ; and, in fact, they burrow into the ground with amazing facility, scraping up the earth like a rabbit, and throwing back what they have thus loosened behind them. But the form of their hole is still more wonderful ; it resembles the letter Y ; the two branches being two openings, which conduct into one channel, and terminate

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in their general apartment, that lies at the bottom. As the whole is made on the declivity of a mountain, there is no part of it on a level, but the apartment at the end. One of the branches, or openings issues out, sloping downwards; and this serves as a kind of sink, or drain to the whole family, where they make their excrements, and where the moisture of the place is drawn away. The other branch, on the contrary, slopes upwards, and this serves as their door upon which to go out and in. The apartment at the end is very warmly stuccoed round with moss and hay, of both which they make an ample provision during the summer. As this is a work of great labour, so it is undertaken in common; some cut the finest grass, others gather it, and others take their turns to drag it into the hole. Upon this occasion, as we are told, one of them lies on its back, permits the hay to be heaped up on its belly, keeps its paws upright to make greater room; and in this manner, laying still upon its back, it is dragged by the tail, hay and all, to their common retreat. This also some give as a reason for this hair being generally worn away on their backs, as is usually the case; however, a better reason for this may be assigned, for their continually rooting up holes, and passing through narrow openings. But, be this at it will, certain it is that they all live together and work in common to make their habitation as snug and convenient as possible. In it they pass three parts of their lives; into it they retire when the storm is high; in it they continue while it rains; there they remain when apprehensive of danger, and never stir out except in fine weather, never going far from home even then. Whenever they venture abroad, one is placed as a sentinel, sitting upon a lofty rock, while the rest amuse themselves in playing about the green fields,

or are employed in cutting grass, and making hay for their winter's convenience. Their trusty sentinel, when an enemy, a man, a dog, or a bird of prey approaches, apprizes its companions with a whistle, upon which they all make home, the sentinel himself bringing up the rear.

But it must not be supposed that this hay is designed for provision ; on the contrary, it is always found in as great plenty in their holes at the end as in the beginning of winter ; it is only sought for the convenience of their lodging, and the advantages of their young. As to provision, they seem kindly apprized by nature, that during the winter they shall not want any, so that they make no preparations for food, though so diligently employed in fitting up their abode. As soon as they perceive the first approaches of the winter, during which their vital motions are to continue in some measure suspended, they labour very diligently to close up the two entrances of their habitation, which they effect with such solidity, that it is easier to dig up the earth any where else, than where they have closed it. At that time they are very fat, and some of them are found to weigh above twenty pounds ; they continue so for even three months more ; but by degrees their flesh begins to waste, and they are usually very lean by the end of winter. When their retreat is opened, the whole family is then discovered, each rolled into a ball, and covered up under the hay. In this state they seem entirely lifeless ; they may be taken away, and even killed without their testifying any great pain ; and those who find them in this manner, carry them home, in order to breed up the young and eat the old ones. A gradual and gentle warmth revives them ; but they would die if too suddenly brought near the fire, or if their juices were too quickly liquefied.

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"Strictly speaking," says M. Buffon, "these animals cannot be said to sleep during the winter ; it may be called rather a torpor, a stagnation of all the faculties. This torpor is produced by the congelation of their blood, which is naturally much colder than that of all other quadrupeds. The usual heat of man and other animals is about thirty degrees above congelation ; the heat of these is not above ten degrees. Their internal heat is seldom greater than that of the temperature of the air. This has been often tried by plunging the ball of the thermometer into the body of a living dormouse, and it never rose beyond its usual pitch in air, and sometimes it sunk above a degree. It is not surprising, therefore, that these animals, whose blood is so cold naturally, should become torpid, when the external cold is too powerful for the small quantity of heat in their bodies, yet remaining ; and this always happens when the thermometer is not more than ten degrees above congelation." This coldness M. Buffon has experienced in the blood of the bat, the dormouse, and the hedgehog, and with great justice he extends the analogy to the marmot, which, like the rest, is seen to sleep all the winter. This torpid state continues as long as the cause which produces it continues ; and it is very probable that it might be lengthened out beyond its usual term, by artificially prolonging the cold ; if, for instance, the animal were rolled up in wool, and placed in a cold cellar, nearly approaching to, but not quite so cold as an ice-house, for that would kill them outright, it would remain perhaps a whole year in its state of insensibility. However this be, if the heat of the air be above ten degrees, these animals are seen to revive : and, if it be continued in that degree of temperature, they do not become torpid,

but eat and sleep at proper intervals, like all other quadrupeds whatever.

QUEBEC MARMOT.

THE Quebec marmot is rather larger than a rabbit; it has a black blunt nose; short rounded ears; cheeks puffed, of a grey colour, and a dusky face. The hair on its back is grey at bottom, black in the middle, with whitish tops. Its belly and legs are of an orange colour; its toes are black, naked, and quite divided. It has four toes and the rudiments of another, on the fore feet; five behind. Its tail is short, and of a dusky colour. It inhabits Hudson's bay and Canada, and may be tamed.

MARYLAND MARMOT.

THE Maryland marmot is about the size of a rabbit. Its ears are short and rounded; its eyes black and prominent. Its nose is sharper than that of the last. Its nose and cheeks are of a bluish ash colour; its back of a ferruginous brown; its sides and belly paler. Its tail is half the length of its body, covered with pretty long dusky hair; its toes are divided, and armed with sharp claws. It has four before, and five behind. Its feet and legs are black.

It inhabits Virginia and Pennsylvania. During winter it sleeps under the hollow roots of trees. It lives on wild fruits, and other vegetables. Its flesh is reckoned very good eating. It tastes like that of a pig. When surprised, it retreats into holes. It is found in the Bahama isles also; but it is probable it does not sleep during the winter in that climate.

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HOARY MARMOT.

THE hoary marmot, about the same size as the former, derives its name from its appearance. It inhabits the northern parts of North America. The tip of its nose is black; its ears are short and oval; its cheeks are whitish. Its colour is dusky and tawny; its hair is coarse and long, ash coloured at the root, black in the middle, and whitish at the tip; whence it has that hoary look. Its legs are black; its claws dusky; four before, five behind; its tail is black, mixed with rust colour.

MAULINE MARMOT.

THIS animal was discovered by Molina, in the province of Maule, in Chili, where it inhabits woods. It is said to be about twice the size of the Alpine marmot, nearly of the same colour, but has pointed ears, lengthened nose, four rows of whiskers, and a longer tail than the common marmot. On each foot are also said to be five toes. It is represented as a strong animal, and not easily conquered by dogs which happen to attack it.

EARLESS MARMOT.

THIS species is marked by a white line over each eye, yellow teeth, long black whiskers, and an ash coloured face. The hind part of its head, and its whole back, are of a pale yellowish brown, often distinctly spotted with white, sometimes undulated with grey; the underside of the body and legs are of a yellowish white; its tail is covered with long hair, brown above, bordered with black, each hair tipped with white; its underside is of

a bright rust. The three middle toes of the fore feet are long, armed with long sharp claws; the exterior and interior toes are short; the last lies remote from the others, with a short blunt claw. It is the most elegant of the marmots, and has scarcely any external ears.

The length of the animal is about one foot; of its tail, to the end of the hairs, four inches and a half. It inhabits Bohemia, Hungary, and from the banks of the Wolga to India, and Persia, Siberia, Great Tartary, Kamtschatka, and even the continent of America itself. It burrows, and forms its magazine of corn, nuts, &c. for its winter food. Like the squirrel, it sits up while it eats. Some inhabit the fields of Siberia, others penetrate into the granaries. The first form holes under the ground with a double entrance, where they sleep during winter; those which inhabit granaries keep in motion even during the cold season. About the Lena, they couple at the beginning of May; but about Astracan much earlier. They bring from five to eight young ones, which they bring up in their burrows; only one inhabits each burrow; the males are always, except in the coupling season, separate from the females. They whistle like the former species, are very irascible, and bite hard. They often quarrel with and tear each other; yet they sit in multitudes near their holes. They are very fond of salt, and are taken in great numbers on board the barges laden with that commodity on the rivers. They are both herbivorous and carnivorous. They feed on plants, and destroy the young of birds and mice. The ladies of Bohemia were wont to make cloaks of their skins; they are now used only for linings, and appear very beautiful for that purpose. They sleep a large portion of their time at all seasons.

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GUNDI MARMOT.

THIS animal is of the size of a small rabbit, and of a red colour ; inhabits Barbary towards mount Atlas. It has truncated ears, with large apertures, and a short tail. Its upper fore teeth are truncated ; the lower slender, and pointed. It has four toes on each foot, furnished with claws, and walks on the hind feet as far as the heel.

BOBAC.

THE bobac is about the size of the Alpine marmot. Its colour is grey above, and beneath fulvous or ferruginous. The tail is short, somewhat slender, and very hairy.---It is a native of Poland, Russia, and other mountainous parts of Europe.

These animals burrow obliquely in the ground to the depth of two, three, or four yards ; and form numbers of galleries, with one common entrance from the surface ; each gallery ending in the nest of its inhabitants. Sometimes, however, the burrows consist of but one passage. Though these are found in the greatest numbers where the earth is lightest, yet they are very common even in the strata of the mountains. In very hard and rocky places, from twenty to forty of these animals join together to facilitate the work ; and they live in society, each with its nest at the end of its respective gallery. To their nests they collect, especially towards autumn, the finest hay they can procure ; and in such plenty, that sufficient is often found in one of them for a night's food for a horse.

During the middle, or sunny part of the day, they sport about the entrance of their holes ; but seldom go far from them. At the sight of man,

they retire with a slow pace ; and sit upright near the entrance, giving a frequent whistle, and listening to the approach. In places where they live in large families, they always place a centinel to give notice of any danger, during the time when the rest are employed in feeding.

They are mild, good-natured, and timid. They feed only on vegetables ; which they go in search of in the morning, and about the middle of the day. They sit on their hams when they eat, and carry the food to their mouth with their fore paws ; and in this posture it is that they defend themselves when attacked. When they are irritated, or when any one attempts to lay hold of them, they bite desperately, and utter a very shrill cry.---In summer they eat voraciously ; but remain torpid all winter, except when kept in very warm places ; and even then they eat but little, and will, if possible, escape into some comfortable place, in which to pass this dreary season ; but they return to their master in the spring. They very soon become tame, even when taken of full age, and the young ones are familiar from the moment they are caught.

The flesh is eatable ; and, except that it is somewhat rank, resembles that of the hare. The fat is used for dressing leather and furs ; and the skins are employed by the Russians for clothing. The female brings forth early in the spring, and has usually six or eight young ones at a litter.

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SQUIRREL TRIBE.

THE squirrels are for the most part light, nimble, and elegant animals ; climbing trees with the utmost agility, and springing with astonishing security from one branch to another. Some of them are provided with hairy membranes, extending from the fore to the hind legs ; which, when spread out, by rendering them more buoyant, enable them to leap considerable distances from tree to tree. Some of the species form their nests, and live almost entirely in the trees ; and others burrow under the ground. None of them are carnivorous. Many of the squirrels may, with care, be rendered docile ; but when they are in the least irritated, they attempt to bite. In confinement they are generally very frolicsome. When they are on the ground, they advance by leaps ; and in eating they sit erect, and hold the food in their fore paws.

They have two front teeth in each jaw ; the upper ones wedge-shaped, and the lower sharp ; five grinders on each side of the upper jaw, and four on each side of the under one. They have also collar bones in the skeleton ; and in most of the species, the tail spreads towards each side.

COMMON SQUIRREL.

THIS elegant little animal is equally admired for the neatness of its figure, and the activity and liveliness of its disposition. Though naturally wild and timid, it is soon reconciled to confinement, and easily taught to receive with freedom

the most familiar caresses from the hand that feeds it.

In the spring these creatures seem peculiarly active ; pursuing each other among the trees, and exerting various efforts of agility. During the warm summer nights, they may also be observed in a similar exercise. They seem to dread the heat of the sun ; for during the day, they commonly remain in their nests, and make their principal excursions by night.

It seldom makes any noise, except when it experiences either pain or pleasure ; in the former case it makes a sharp piercing note ; and in the latter, it makes a noise not unlike the purring of a cat. The tail of the squirrel is its greatest ornament ; and serves as a defence against the cold, being large enough to cover the whole body ; it is likewise of use to the animal in taking its leaps from one tree to another.

In northern climates the squirrels change their red summer coat, on the approach of winter, to grey ; and it is singular that this alteration will take place in those climates, even within the warmth of a stove. Dr. Pallas had one, entirely red, brought to him on the 12th of September. It was placed in a stove. About the 4th of October many parts of its body began to grow hoary ; and when it died, which was just a month afterwards, the whole body had attained a grey colour ; the legs, and a small part of the face, alone retaining a reddish tinge.

"The squirrel," says Buffon, "is neither carnivorous nor hurtful ; its usual food is fruits, nuts, and acorns ; it is cleanly, nimble, active, and industrious ; its eyes are sparkling, and its physiognomy marked with meaning. It generally, like the hare and rabbit, sits up on its hinder legs ; and uses the fore paws

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as hands ; these have five claws, or toes, as they are called, and one of them is separated from the rest like a thumb. This animal seems to approach the nature of birds, from its lightness, and surprising agility on the tops of trees. It seldom descends to the ground, except in case of storm, but jumps from one branch to another ; feeds in spring, on buds and young shoots ; in summer, on the ripening fruits ; and particularly the young cones on the pine-tree. In autumn it has an extensive variety to feast upon ; the acorn, the filbert, the chesnut, and the wilding. This season of plenty, however, is not spent in idle enjoyment ; the provident little animal gathers at that time its provisions for the winter ; and cautiously foresees the season when the forest shall be stripped of its leaves and fruitage."

Its nest is generally formed among the large branches of a great tree, where they begin to fork off in small ones. After choosing the place where the timber begins to decay, and an hollow may the more easily be formed, the squirrel begins by making a kind of a level between the forks ; and then bringing moss, twigs, and dry leaves, it binds them together with great art, so as to resist the most violent storm. This is covered up on all sides ; and has but a single opening at top, which is just large enough to admit the little animal ; and this opening is itself defended from the weather by a kind of canopy, made in the fashion of a cone, so that it throws off the rain, though never so heavy. The nest thus formed, with a very little opening above, is, nevertheless, very commodious and roomy below ; soft, well knit together, and every way convenient and warm. In this retreat, the little animal brings forth its young, shelters itself from the scorching heat of the sun, which it seems to fear, and from the

storms and inclemency of winter, which it is still less capable of supporting. Its provision of nuts and acorns is seldom in its nest, but in the hollows of the tree, laid up carefully together, and never touched but in cases of necessity. Thus one single tree, serves for a retreat and a store-house ; and without leaving it during the winter, the squirrel possesses all those enjoyments that its nature is capable of receiving. But it sometimes happens that its little mansion is attacked by a deadly and powerful foe. The marten goes often in quest of a retreat for its young, which it is incapable of making for itself ; for this reason it fixes upon the nest of a squirrel, and, with double injustice, destroys the tenant, and then takes possession of the mansion.

However, this is a calamity that but seldom happens ; and, of all other animals, the squirrel leads the most frolicsome playful life, being surrounded with abundance, and having few enemies to fear. They seldom bring forth above four or five young at a time ; and that but once a year. The time of their gestation seems to be about six weeks ; they are pregnant in the beginning of April ; and bring forth about the middle of May.

The squirrel is never found in the open fields, nor yet in copses, or underwoods ; it always keeps in the midst of the tallest trees, and, as much as possible, shuns the habitations of men. It is extremely watchful ; if the tree in which it resides be but touched at the bottom, the squirrel instantly takes the alarm, quits its nest, at once flies off to another tree, and thus travels, with great ease, along the tops of the forest, until it finds itself perfectly out of danger. In this manner it continues for some hours at a distance from home, until the alarm be passed away ; and then it returns

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by paths, that to all other quadrupeds but itself are utterly impassable. Its usual way of moving is by bounds ; these it takes from one tree to another, at forty feet distance ; and if at any time it is obliged to descend, it runs up the side of the next tree with amazing facility.

GREAT SQUIRREL.

Of all the species yet discovered, this is the largest, being equal in size to a cat. It is a native of India, and was first described by Mons. Sonnerat, who informs us it is found in the Malabar country, and especially about the mountains of Cardamone, where it feeds on fruits, and is particularly fond of the milk of the cocoa-nut, which it pierces when ripe, in order to obtain the liquor.

The fur on the whole animal is long and full ; the top of the head, ears, back, and sides, are ferruginous, and a small band of a similar colour commences beneath each ear, passing along the neck towards the sides. Part of the neck, in front, the beginning of the body, and outsides of the shoulders and thighs, are black ; the tail is also black ; the head, under part of the neck, insides of the limbs and belly, are yellowish ferruginous, somewhat paler on the breast ; the iris of the eye is of a pale yellow ; the fore feet have four toes with crooked claws, and a very small thumb or fifth toe, with a small rounded nail ; the hind feet have five toes, with strong crooked claws on all ; the tail is longer than the body, and appears equal to it in size when fully expanded. This animal, according to Sonnerat, is easily tamed, and is called about the coasts of Malabar the great wood rat.



MADAGASCAR SQUIRREL.

THIS, which, from Mr. Cepede's description, given in the seventh supplemental volume of Buffon, should seem equal in size to the preceding, is said to measure seventeen inches to the tail, which is still longer, and of a dissimilar appearance to that of other squirrels; and rather resembling that of a cat, but feathering towards each side, and terminating in a very taper point. The whole upper parts and tail are of a deep black, and the nose, ears, and whole under parts, yellowish white; the ears are plain or not tufted. It is a native of Madagascar.

GINGI SQUIRREL.

THIS species is described by Sonnerat, who informs us that it is rather larger than the European squirrel, and of a brownish grey colour, lighter on the belly, legs, and feet; on each side the belly is a white band reaching from the shoulders to the thighs; the eyes are also encircled with white, and the tail is black, with whitish hairs intermixed. It is an inhabitant of Gingi, in the East Indies.

CHILIAN SQUIRREL.

THIS species is mentioned by Molina in his Natural History of Chili. It is somewhat larger than a black rat, and is of yellowish brown colour, with a black stripe on each shoulder; the nose is sharp, the ears rounded, and the tail flocky towards the tip, and of the same colour with the body. It is a gregarious animal, and inhabits holes

in shrubby places, feeding on roots and fruits, of which it collects a magazine for food.

GEORGIAN SQUIRREL.

THIS species is said by its describer, Mr. Guldenstedt, to be a native of Georgia, in Asia, and to be larger than a common squirrel. Its colour on the upper part of the head, body, and limbs, is dusky ferruginous ; and of the under parts and tail, bright ferruginous, the breast and belly being paler than the other parts : the ears are small, and slightly sharpened at the tips.

PERSIAN SQUIRREL.

IN its general appearance and way of life, this is said to resemble the common squirrel, but differs in colour, and in having plain or untufted ears ; the upper parts are dusky ; and the parts about the eyes, black ; the throat, breast, and belly, yellow, and the sides white ; the tail blackish grey, marked beneath, about the middle, with a white band ; the feet reddish. It is an inhabitant of the mountainous parts of Persia.

GREY SQUIRREL.

THIS species, both in its form and manners, very much resembles the common squirrel. It is about the size of a young rabbit ; and, except the inside of the limbs, and the under parts of the body, which are white, its colour is an elegant pale grey.

The grey squirrels are said to be natives of Lapland, and some other northern climates. They often change the places of their residence ; and sometimes not one of them can be found during

a whole winter, where there were millions in the preceding year. In their journeys from one part of the country to another when it becomes necessary to pass a lake or river, (which is frequently the case in Lapland,) they lay hold of a piece of pine or birch bark, which they draw to the edge of the water, mount upon it, and abandon themselves to the waves. They erect their tails, to catch the wind; but, if it blows too strong, or the waves rise high, the pilot and the vessel are both overturned. This kind of wreck, which often consists of three or four thousand sail, generally enriches some Laplanders, who find the dead bodies on the shore; and, if these have not lain too long on the sand, they prepare the furs for sale. But when the winds are favourable, the adventurers make a happy voyage, and arrive in safety at their destined port.

The grey squirrels are also natives of North America; where they do much mischief in the plantations, but particularly among the maize; for they climb up the stalks, tear the ears in pieces, and eat only the loose and sweet kernel, which lies quite in the inside. They sometimes come by hundreds upon a maize-field, and thus destroy the whole crop of a farmer in one night. In Maryland, therefore, some years ago, every person was compelled to procure and exhibit annually four fresh squirrels; the heads of which, to prevent deceit, were given to the surveyor. In other provinces, every one who killed a squirrel received from the public treasury two-pence, on delivering up its head. Pennsylvania alone paid, from January, 1749, to January, 1750, no less a sum than eight thousand pounds, currency, in rewards for the destruction of these animals; consequently in that year, as many as six hundred and forty thousand must have been killed.

This species resides principally among the trees ; in the hollows of which it makes its nest, with straw, moss, and other materials ; and feeds on acorns, fir-cones, maize, &c. as well as on various kinds of fruit. It is said to amass great quantities of provision for winter ; which it deposits in holes that it prepares beneath the roots of trees, and in other places.

When these animals are sitting on a bough, and perceive a man approach, they instantly move their tails backward and forward, and make a chattering noise with their teeth. This renders them peculiarly odious to sportsmen, who often loose their game by the alarm they thus create.

The flesh of the grey squirrel is eaten by some persons, and is esteemed very delicate. The skins in America are used for ladies' shoes ; and are often imported into England for the lining or facing of cloaks. They are very difficult to kill ; changing their place on the trees with such expedition, as generally to elude the shot of the most expert marksman. They are said to be easily tamed ; and in that state to associate readily with other domestic animals.

BLACK SQUIRREL.

THE black squirrels are very nearly allied to the preceding species ; differing principally in the coal-black colour, and somewhat shorter tail. The muzzle and the tip of the tail are sometimes white.

They are natives of America, and migrate from the territory of the United States. They take to the water when rivers lie in their route ; but, as if conscious of their inability to cross the Niagara in its wide parts, they have been observed to bend their course along its banks, above the falls, and

at its narrowest and most tranquil parts to cross into the British territory. In the year 1795, it was calculated that in the course of two or three days, fifty thousand of them passed that river ; and they committed such depredations on arriving at the settlements on the opposite side, that in one part of the country the farmers deemed themselves very fortunate where they got in only one third of their crop of corn.

"Some writers," says Mr. Weld, "have asserted that these animals cannot swim ; but that when they come to a river, each one provides itself with a piece of wood, or bark, upon which, when a favourable wind offers, it embarks, spreads its bushy tail to catch the wind, and is thus wafted over to the opposite side. Whether they do or do not cross in this manner sometimes, I cannot take upon me to say ; but I can safely affirm that they do not always cross so, as I have frequently shot them in the water while swimming. No animals swim better ; and, when pursued, I have seen them eagerly take to the water. In swimming, their tail serves them by way of rudder, and they use it with great dexterity ; owing to its being so light and bushy, the greater part of it floats upon the water, and thus helps also to support them. Their migration in large numbers, is said to be an infallible sign of a severe winter."

STRIPED SQUIRREL.

THE length of the striped squirrel is about six inches ; its tail, which is rather more, is not curved and bushy, but long and very narrow. The skin is of a reddish brown ; and is marked with five black streaks, one of which runs along the back, and two on each side. These animals eat all kinds of corn ; and, like the common squirrel,

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collect provisions in autumn for the winter, and store them in their holes. They have two cheek pouches ; which they fill with corn in the fields, and in this manner convey it home.

They are natives of America, and dig holes in the ground, which serve for their habitations, and to which they fly for shelter whenever danger is near. Their holes are deep ; and commonly divided into many branches, from one of which they have an opening to the surface of the ground. The advantage they derive from this is, that when they ramble abroad for food, and are prevented from entering the hole at which they went out, they may not expose themselves to their pursuers, but immediately retreat into the other. But in autumn, when the leaves are falling from the trees, it is very diverting to observe their consternation when pursued ; for their holes being covered with leaves, they have then some difficulty in finding them ; they run backward and forward, as though they had lost their way ; and seem to know where their subterraneous haunts lie, but cannot discover the entrances. If they are pursued, and any sudden or loud noise is made, they are constrained to take refuge in the trees ; but this they never do unless in cases of necessity.

Their subterraneous dwellings are formed with much art ; being worked into long galleries, with branches on each side, and each terminating in an enlarged apartment, in which they hoard their stock of winter provision. Their acorns are lodged in one ; in a second the maize ; in a third the hickory nuts ; and in the fourth, perhaps their most favourite food, the chesnut. Nature has given them a fine convenience for collecting their provisions, in their cheek pouches ; which they fill with different articles of their food, that are to be conveyed to their magazines. In Siberia

they hoard up the kernels of the stone pine in such quantities, that ten or fifteen pounds weight of them have been taken out of a single magazine.

As a Swede was some time ago making a mill-dike, pretty late in autumn, he took for that purpose the soil of a neighbouring hill, and met by chance with a subterraneous walk belonging to these squirrels. By tracing it to some distance, he discovered a gallery on one side, like a branch parting from the main stem. It was nearly two feet long; and at its extremity was a quantity of remarkably plump acorns of the white oak, which the careful little animal had stored up against the winter. He soon afterwards found another gallery, on one side, like the former, but containing a store of maize; a third had hickery nuts; and the last and most secret one contained as many excellent chesnuts as would have filled two hats.

In winter, these squirrels are seldom seen; as during that season they keep within their holes. On a fine clear day, however, they sometimes come out. They frequently dig through into cellars where the country people lay up their apples; these they often eat or spoil in such a manner, that few or none of any value are left. In the choice of their food they are remarkably nice; having been observed, after filling their pouches with rye, to fling it out on meeting with wheat, and to substitute for it the superior grain.

They are not to be tamed without great difficulty; and even then it is always dangerous to handle them, as they will bite pretty keenly when a person is not aware of them.

They are caught merely on account of their skins; which, though forming but a slight or ordinary fur, have a very pleasing appearance, when properly set off. These are said to be chiefly sold to the Chinese.

CEYLON, AND ABYSSINIAN SQUIRREL.

WE have joined these two in the same section, as Mr. Pennant seems to suspect that the latter may be only a variety of the former ; and indeed it must be obvious, that when naturalists describe species from single subjects, there is some danger of their multiplying the species from slight variations observable in different individuals belonging to the same species.

The Ceylon squirrel has its ears tufted with black ; a flesh-coloured nose ; cheeks, legs, and belly, of a pale yellow, with a yellow spot between its ears ; its fore head, sides, back, and haunches, are black ; its cheeks are marked with a forked stroke of black ; its tail is twice as long as the body, of a light grey, and very bushy. The part of it next the body is quite surrounded with hair ; on the rest of it the hairs are separated and lie flat. It is thrice the size of the European squirrel.

The Abyssinian squirrel, described by Thevenot, is of the same size with that found in Ceylon ; but he says that its belly and fore feet were grey, and that its soles were flesh-coloured ; that it was very sportive and good-natured, like the common squirrel ; that it would eat any thing except flesh, and would crack the hardest almonds.

JAVAN SQUIRREL.

THIS species, discovered and briefly described by Sparrman, is black on the upper part of the body, and brown on the lower ; the end of its tail is black, and its thumb has a round nail.

BOMBAY SQUIRREL.

THE Bombay squirrel has tufted ears too, but its upper parts are of a dull purple, its lower yellow, and the end of its tail orange. From nose to tail, it measures near sixteen inches; its tail seventeen.

RUDDY SQUIRREL.

THE ruddy squirrel inhabits India; it is larger than the common squirrel; its ears are slightly tufted; its colour above is yellow, mixed with dusky; below of a blood red, inclining to tawny. Its tail is slender, of the same colour, marked lengthways with a black stripe. It has four toes on the fore feet, with a remarkable protuberance instead of a thumb; and five toes on the hind feet.

HUDSON'S BAY SQUIRREL.

THE Hudson's Bay squirrel is smaller than the European, has plain ears, and is marked along the back with a ferruginous line from head to tail. Its sides are paler; its belly is of a pale ash-colour, mottled with black; its tail is neither so long nor so bushy as that of the common kind; but it is of a ferruginous colour, barred with black.

The Carolina squirrel is a variety of the same species. Its head, sides, and back are grey, white, and rust-colour, intermixed. Its belly is white, and is divided from the sides by a ferruginous line. The lower parts of the legs are red. The tail is brown mixed with black, and edged with white. These are also less than the European squirrels;

they vary in colour ; but in most the grey predominates.

VARIED SQUIRREL.

THE varied squirrel has plain ears ; the upper part of its body is varied with black, white, and brown ; its belly is tawny. It is twice the size of the common squirrel. It inhabits Mexico, lives under-ground, lays in a stock of winter food ; it lives on maize, but is never to be tamed.

FAIR SQUIRREL.

THE fair squirrel is of a very small size. Its body and tail are of a flaxen colour. It has plain round ears, and a rounded tail, and inhabits the wood near Amadabād, the capital of Guzarat, where they are to be seen in great abundance, leaping from tree to tree. Linnæus says it is an inhabitant of South America.

BRASILIAN SQUIRREL,

A SMALL creature, eight inches long, is covered with soft dusky hairs, tipped with yellow. Its tail, which is ten inches long, is annulated with black and yellow. Its throat is cinereous. The inside of its legs and its belly are yellow. Its belly is divided lengthways with a white line, which begins on the breast, is interrupted for a small space in the middle, and then continued to the tail. It inhabits Brasil and Guiana.

MEXICAN SQUIRREL.

THE Mexican squirrel is of a mouse colour. The male is marked on the back with seven white

lines, which extend along the tail; the female with only five.

PALM SQUIRREL.

THE palm squirrel has plain ears, an obscure pale yellow stripe on the middle of the back, another on each side, and a third on each side of the belly. The two last in some are very faint; the rest of the hair on the back, sides, and head, is black and red, very closely mixed; on the thighs and legs redder; the belly is of a pale yellow. The hair on the tail is coarse, and does not lie flat; it is of a dirty yellow, barred with black.

Possibly they may vary with respect to the number of stripes. They live much in cocoa trees, and are very fond of palm wine. Some authors say, that this species does not erect its tail like the other squirrels, but expands it sideways.

BARBARY SQUIRREL.

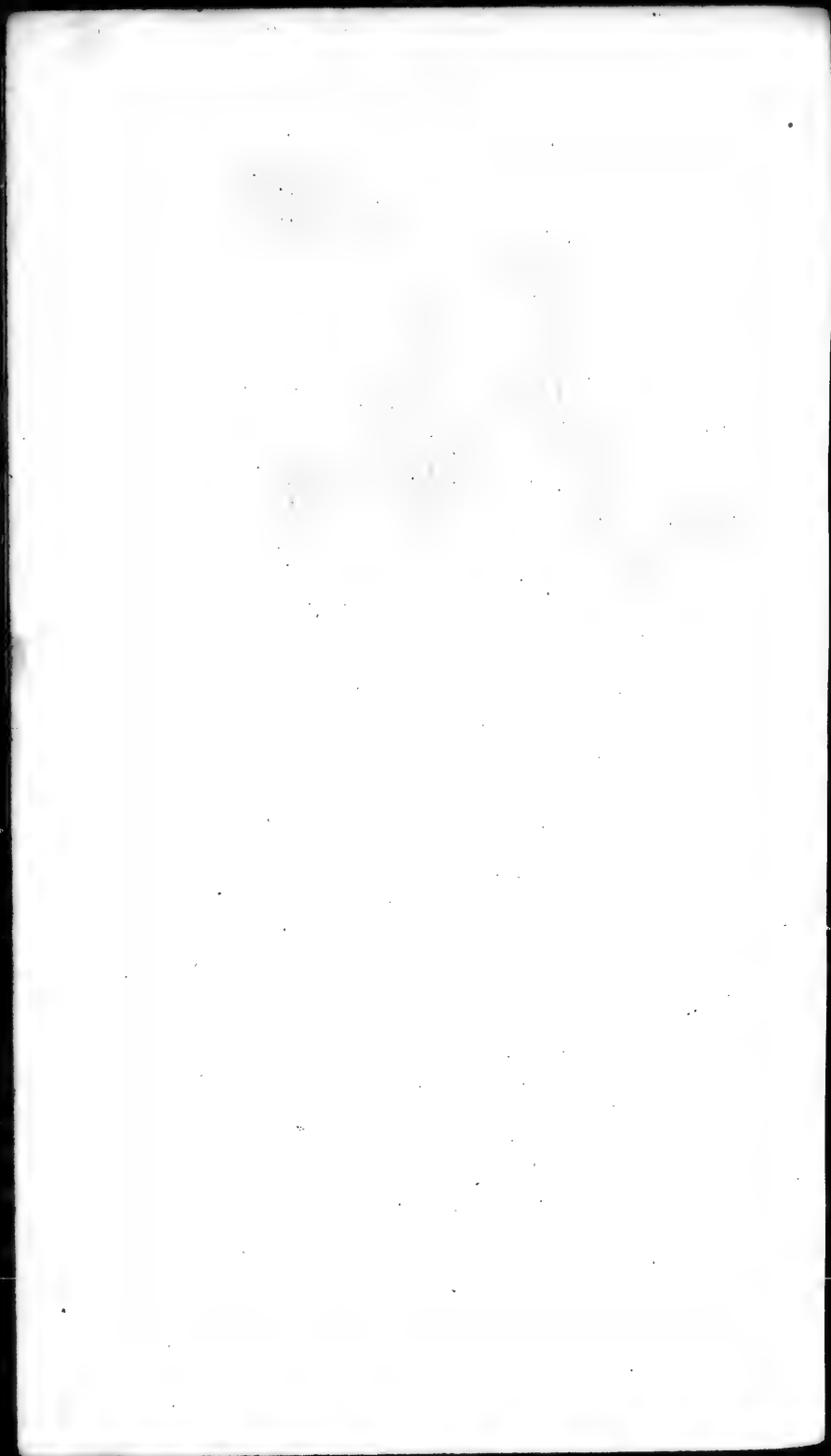
THE Barbary squirrel has full black eyes, with white orbits. Its head, body, feet, and tail, are cinereous, inclining to red, lighter on the legs. Its sides are marked lengthways, with two white stripes. Its belly is white; its tail bushy, marked regularly with shades of black. It is of the size of the common squirrel. Both this and the former species inhabit Barbary, and live in trees, especially the palm.

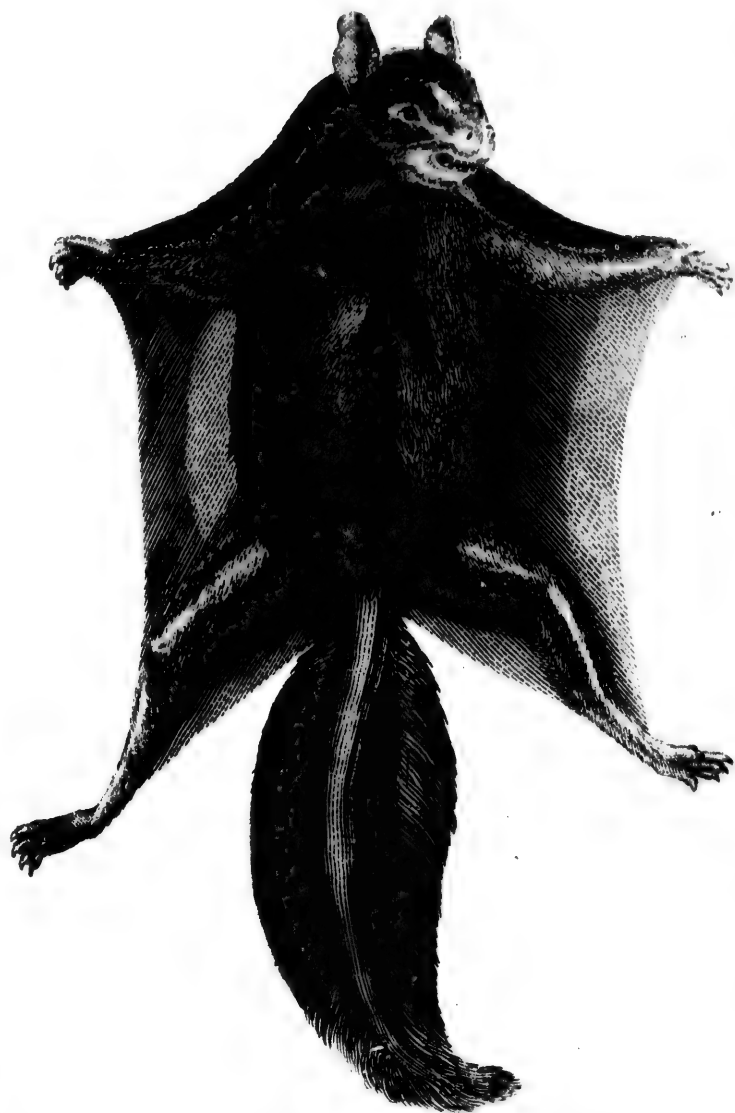
We come now to a second division of this genus, marked by a membrane extended from the fore to the hind leg of each species.

BARBARY SQUIRREL



VIRGINIAN FLYING SQUIRREL





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SAILING SQUIRREL.

NAMES are necessary for distinction ; but may sometimes mislead. The sailing squirrel has nothing to do on the water. He inhabits Java, and others of the Indian islands, leaps from tree to tree, as if he flew, and will catch hold of the boughs with his tail. They vary in size ; some are of the size of the common squirrel ; others as large as a hare. The usual length, from the nose to the tail, is eighteen inches ; the tail fifteen. The colour of the head, body, and tail, is a bright bay ; in some parts inclining to orange ; the breast and belly are of a yellowish white. Its head is small and rounded ; its upper lip cloven ; its ears small and blunt. It has two small warts at the outmost corner of each eye, with hairs growing out of them. Its neck is short. It has four toes on the fore feet ; and, instead of a thumb, a slender bone, two inches and a half long, lodged under the lateral membrane, and serving to stretch it out ; from thence to the hind legs, extends the membrane, which is a continuation of the skin of the sides and belly, and extends along the fore legs, and stretches out near the joint in a winged form. This species has five toes on the hind feet ; and, on all the toes, sharp, compressed, bent claws. Its tail is covered with long hairs, disposed horizontally. It is not flat, like that of other squirrels, but cylindric, like that of a cat. It is very nearly allied to the flying opossum.

Nieuhoff describes this creature under the name of the flying cat.

SEVERN RIVER FLYING SQUIRREL.

THIS species is found about the Severn river in the southern parts of Hudson's Bay. In the Philosophical Transactions, it is called the greater flying squirrel. Its back and sides are of a deep ash colour at bottom, ferruginous on the surface. The underside of the body is of a yellowish white. Its hair is every where long and full. The instrument of flying is disposed from leg to leg ; but does not border the fore legs. It is about the size of a common squirrel.

HOODED FLYING SQUIRREL.

THE hooded squirrel, according to Seba, who is the only author that has described it, inhabits Virginia. Its lateral membrane begins at the chin and ears, and extends from the fore to the hind leg. It is reddish above, cinereous tinged with yellow beneath. Its ears are large and oval.

AMERICAN FLYING SQUIRREL.

THIS animal, which is a native of most parts of North America, has large black eyes, circular naked ears, and a hairy membrane extending nearly round the body. The tail, which tapers to a point, has its hairs disposed flat-ways on its sides. The upper parts of the body are of a cinereous brown ; the belly is white, tinged with yellow. The membrane passes the fore and hind legs, to the tail ; on the fore legs it adheres as far as the toes, and includes a peculiar bone, which is attached to the wrist, and helps to stretch out this skin in flying ; and on the hind leg it extends to the ankles.

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These squirrels inhabit hollow trees ; where they sleep during the day, and from whence they only make their appearance in the night ; at which latter time they are very lively and active. They associate in flocks ; several living in the same tree, which they never willingly quit to run upon the ground, but almost constantly reside among the branches. By means of their lateral membranes, they are able to make astonishing leaps, with the greatest ease, from tree to tree. In these efforts they extend their hind legs, and stretch out the intervening skin, by which they present a greater surface to the air, and become more buoyant. They are, however, still under the necessity of taking advantage of the lower branches of the trees to which they leap, for their weight prevents them from keeping in a straight line. Sensible of this, they always take care to mount so high as to ensure them from falling to the ground. This extended skin acts upon the air somewhat in the manner of a paper kite, and not by repeated strokes like the wings of a bird. The animal being naturally heavier than the air, must of course descend ; the distance, therefore, to which it can jump, depends on the height of the tree on which it stands. When it is at rest, the skin is wrinkled up against its sides.

These animals are generally seen in flocks of ten or twelve ; and to persons unaccustomed to them, they appear at a distance, in their leaps, like leaves blown from the trees by the wind. " When I first saw them," says Catesby, " I took them for dead leaves blown one way by the wind ; but was not long so deceived, when I perceived many of them follow one another in the same direction. They will fly fourscore yards from one tree to another."

The females produce three or four young at a

time. This species use the same food, and form their hoards in the same manner as others of the squirrel tribe. They are easily tamed, and soon become familiar ; they love warmth, and are very fond of creeping into the sleeve or pocket of their owner ; and if thrown upon the ground, they instantly shew their dislike to it by running up and sheltering themselves in his clothes.

EUROPEAN FLYING SQUIRREL.

THE European flying squirrel differs from the last species principally in having its tail full of hair, and rounded at the end ; and in the colour of its body ; the upper part of which is a fine grey, and the lower white. Its whole length is about nine inches, of which the tail occupies five. It is found in the woods of Siberia, Lapland, and other northern regions, where it feeds principally on the young branches of the beech and pine.

Its nest is formed of moss, in the hollows, high among the branches ; and, except during the breeding season, it is solitary. It always sleeps during the day time, and seldom appears abroad in bad weather. It is active the whole winter ; being frequently taken during that season, in the traps laid for the grey squirrels. Like the last species, it can leap to vast distances from tree to tree.

The females have two, three, and sometimes four young at a time. When the mother goes out in search of food, she carefully wraps them up in the moss of her nest. She pays them the utmost attention ; brooding over them, and sheltering their tender bodies, by her flying membrane, from the cold. When taken from the nest, it has been found very difficult to keep the young alive ; owing probably to the want of proper food. The

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DORMOUSE



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skins of these squirrels are not very valuable in a commercial view.

DORMOUSE TRIBE.

THESE animals live in holes in the ground, where they always continue in a state of torpidity during the winter. Their pace is a kind of leap, in which, like the jerboas, they are assisted by their tails. They feed entirely on vegetables, and eat only in the night. In this act they sit upright, and carry the food to their mouth with the paws. When they are thirsty, they do not lap, (like most other quadrupeds,) but dip their fore feet, with the toes bent, into the water, and drink from them.

They have two front teeth in each jaw; the upper wedge-shaped, the lower compressed; and in each jaw four grinders. The whiskers are long. The tail is cylindrical, hairy, and thickest towards the end. The fore and hind legs are of nearly equal length; and the fore feet have each four toes.

COMMON DORMOUSE.

THIS animal is about the size of a mouse, but more plump or rounded; and of a tawny red colour, with a white throat and full black eyes. It lives in woods or thick hedges; forming its nest of grass, dried leaves, or moss, in the hollow of some low tree, or near the bottom of a close shrub.

The dormice have not the sprightliness of the

squirrel ; but, like that animal, they form little magazines of nuts, acorns, and other food, for their winter provision. The consumption of their hoard, during the rigour of winter, is but small ; for, retiring into their holes on the approach of the cold, and rolling themselves up, they lie torpid nearly all that gloomy season. Sometimes they experience a short revival in a warm sunny day ; when they take a little food, and then relapse into their former state.

They make their nest of grass, moss, and dried leaves ; this is six inches in diameter, and open only from above. Their number of young is generally three or four.

FAT DORMOUSE.

THE fat dormouse, with thin naked ears, is near six inches long ; its tail four and a half ; its body is thicker than that of the squirrel, and is covered with soft ash coloured hair ; its belly is whitish ; and its tail is full of long hair.

It inhabits France, and the south of Europe ; and the south-west parts of Asiatic Russia. It lives on trees ; leaps from bough to bough ; feeds on fruits and acorns ; lodges in hollow trees ; and remains in a torpid state during winter, at which time it is very fat.

GARDEN DORMOUSE.

THIS species has its eyes surrounded with a large spot of black, reaching to the base of the ears. It has also another black spot behind its ears. Its head and body are of a tawny colour ; its throat, and the whole under side of its body, is white, tinged with yellow ; its tail is long, with short hair at the base, but bushy at the end.

It is about five inches long ; its tail four. It inhabits France and the south of Europe. It is found in magpies' nests, and hollow trees about the Wolga ; but neither this nor the former species extends beyond the Uralian mountains. It infests gardens, and is very destructive to fruits of all kinds. It is particularly fond of peaches ; lodges in the holes of walls ; brings five or six young at a time ; and, like the former, remains torpid during the winter, waking only at intervals. It has a strong smell like a rat.

WOOD DORMOUSE.

THIS species is much allied to the preceding, but has a less sharpened visage, and a much shorter tail, and its general proportions bear a great resemblance to those of the fat dormouse. Its length to the tail, is about four inches, and the tail about three inches ; its colour on the upper parts and tail, is greyish ferruginous, and of the under parts, yellowish white ; the patch, or black mark on each side the head, is much narrower than in the preceding species, and extends only to the ears ; the tail is very furry, the hair spreading as in that of a squirrel. It is said to be a native of Russia, Georgia, &c. ; inhabiting woods, &c.

EARLESS DORMOUSE.

THE earless dormouse is so called, not because it is absolutely without ears, but because its ears are so very minute, as scarcely to appear. Its head is flat ; its nose obtuse ; its eyes full and black ; its upper lip is bifid ; and its whiskers are long ; its upper parts and its fore legs, are of a pale ferruginous colour, except that from the shoulder to the hind parts, it has a white line

along each side, and another above each eye. Its belly and feet are of a dirty white ; its tail is black in the middle, and hoary on the sides ; its toes are long and distinct, with very long claws. There is a large knob on the fore feet. The hind legs are black behind, and naked.

It is a creature of the size of a common squirrel ; but much broader and flatter. It inhabits the mountains, about eight hundred miles above the Cape of Good Hope. It never climbs trees ; it burrows ; feeds on bulbous roots ; and is particularly fond of potatoes. It often walks on its hind feet, and often lies flat on its belly, is very tame, and never offers to bite. It frequently flirts up with its tail. It makes a warm nest, and forms a round hole in it, in which it lodges. It sometimes keeps close in this retreat for three entire days together.

GILT-TAILED DORMOUSE.

THIS singular species, though considered by its first describer, Mr. Allamand, as well as by Mr. Pennant in his History of Quadrupeds, as a species of dormouse, is allied in perhaps an equal degree of the porcupines, among which it is placed by Mr. Schreber. It is supposed to be a native of Surinam, and is remarkable for the beauty of its colours, being of a fine purplish brown above, rather paler beneath ; the tail is brown at its base, black for half its length, and the remainder of a bright gold-yellow, and on the top of the head, is a longitudinal stripe, of that colour. The head is large in proportion to the body, the eyes small, the ears moderately large, short, and rounded ; the upper lip divided ; the front teeth white and short, those of the lower jaw being the largest ; on each side the nose are long vibrissæ, or whiskers ; the

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legs are short ; the feet divided into four toes ; with weak crooked claws ; and in place of a thumb, a small tubercle. On the hind part of the head, and along the back, are scattered several hairs, much longer than the rest, and of a very different form and substance, being flat, stiff, and rough to the touch ; they seem to arise from small transparent sheaths, and their conformation is highly singular, each hair, or rather quill, being cylindric, and very small near the body, growing flat towards the middle part where it is half a line broad, and thence gradually diminishing to a very fine point ; along the middle runs a channel, or gutter, which, if examined with a glass, appears yellow, while the sides, which are elevated, are of a brown colour, and thus a sort of double reflection of light takes place, causing the purplish tinge above mentioned ; these singular hairs or quills become gradually smaller as they approach the sides of the body, and quite disappear towards the abdomen. It seems to be an animal formed for climbing trees, and from the description given above, it will appear that Mr. Schreber's opinion is just, and that it should in reality be considered, notwithstanding its diminutive size, as a species of porcupine. Its length from nose to tail, is five inches, and of the tail six inches and nine lines.

GUERLINGUET.

THIS animal is described in the seventh supplemental volume of the count de Buffon's Natural History, and is said to be of the size of a squirrel, but of a longer form. It is a native of Guiana, and resides on trees. Its teeth resemble those of a squirrel, and it has the same method of elevating its tail, which is longer than the body, and obscurely annulated with numerous alternate brown

and yellowish bands, the tip itself being black. This animal measures between seven and eight inches to the tail.

JERBOA TRIBE.

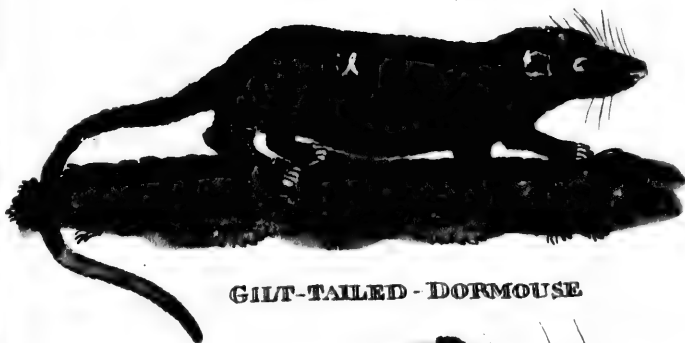
THE jerboas seem in many respects, both of conformation and habit, much allied to the kangaroos ; but an adherence to artificial system will not allow them to be arranged together. They use their long hind legs in leaping, very seldom going on all-fours ; and with their fore legs, they both carry the food to their mouth, and make their holes in the ground. They are inhabitants principally of the warmer climates.

They have two front teeth above, and two below. The fore legs are short, and their hind ones very long ; and they have clavicles, or collar bones.

EGYPTIAN JERBOA.

THIS species is found in Egypt and different parts of Africa.

The jerboas inhabit dry, hard, and clayey ground. They dig their burrows very speedily, not only with their fore feet, but with their teeth ; and fling the earth back with their hind feet, so as to form a heap at the entrance. The burrows are many yards long ; and run obliquely and winding, but not above half a yard deep below the surface. They end in a large space or nest, the receptacle of the purest herbs. They have usually but one entrance ; yet, by a wonderful sagacity, the animals



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work from their nest another passage, to within a very small space from the surface, which, in case of necessity, they can burst through, and so escape.

The sands and rubbish which surround modern Alexandria, are much frequented by the jerboas. They live there in troops; and, in digging the ground, are said to penetrate even through a stratum of softish stone, which is under the layer of sand. Though not actually wild, they are exceedingly restless; the slightest noise, or any new object whatever, makes them retire to their holes with the utmost precipitation.

It is almost impossible to kill them, except when they are taken by surprise. The Arabs have the art of catching them alive, by stopping up the outlets to the different galleries belonging to the colony; one excepted, through which they force them out.

Though animals of a very chilly nature, they keep within their holes in the day, and wander about only during the night. They first come out at sun set, and clear their holes of their filth; and they remain abroad till the sun has drawn up the dews from the earth.

They walk only on their hind legs, the fore legs being very short; and, on the approach of any danger, they immediately take to flight, in leaps six or seven feet high, which they repeat so swiftly, that a man mounted on a good horse can scarcely overtake them. They do not proceed in a straight line; but run first to one side, and then to the other, till they find either their own burrow, or some neighbouring one. In leaping, they bear their tails, which are longer than their bodies, stretched out. In standing or walking, they carry them in the form of an S; the lower part touching the ground, so that it seems a director of their mo-

tions. When surprised, they will sometimes go on all fours; but they soon recover their attitude of standing on their hind legs, like a bird. When undisturbed, they use the former posture; then rise erect, listen, and hop about like a crow. In digging or eating, they drop on their fore legs; but in the latter action, they often sit up also like a squirrel.

The Arabs of the kingdom of Tripoli, in Africa, teach their greyhounds to hunt the antelope, by first instructing them to catch jerboas; and so agile are these little creatures, that Mr. Bruce has often seen, in a large court-yard or inclosure, the greyhound employed a quarter of an hour before he could kill his diminutive adversary; and had not the dog been well trained, so as to make use of his feet as well as his teeth, he might have killed two antelopes in the time of killing one jerboa.

In their wild state, these animals are fond of tulip-roots, and nearly all the oleaginous plants; but in confinement, they do not refuse raw meat. They are the prey of most of the smaller rapacious beasts. It requires no difficulty to tame them, but it is necessary that they should be kept warm. They are so susceptible of cold, as to foretel bad weather by wrapping themselves close up in their cage before its commencement; and those that are abroad, always, on these occasions, stop up the mouths of their burrows. They sleep during the winter, but a warm day sometimes revives them. On the return of the cold, they retreat again to their holes.

M. Sonnini fed for some time, while he was in Egypt, six of these animals, in a large cage of iron wire. The very first night they entirely gnawed asunder the upright and cross sticks of their prison; and he was under the necessity of having the inside of the cage lined with tin. They were

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fond of basking in the sun ; and the moment they were put in the shade, they clung to each other, and seemed to suffer from the privation of warmth. They did not usually sleep during the day. Though they had much agility in their movements, gentleness and tranquillity seemed to form their character. They suffered themselves to be stroked with great composure ; and never made a noise or quarrelled, even when food was scattered among them. No distinguishing symptoms of joy, fear, or gratitude were discoverable ; and even their gentleness was by no means either amiable or interesting ; it appeared the effect of a cold and complete indifference, approaching to stupidity. Three of these died before Sonnini left Alexandria ; two died on a rough passage to the island of Rhodes ; and the last was lost, and, as he supposes, devoured by cats, while he was at the island.

He says it is very difficult to transport these tender little creatures into other climates ; but as an indispensable precaution to those who attempt it, he advises that they be close shut up in strong cages, or other conveniences, without any possibility of escaping ; for their natural disposition inciting them to gnaw whatever comes in their way, they may occasion very considerable damage to a ship in the course of her voyage ; and, being able to eat through the hardest wood, may even endanger her sinking.

They breed several times in the summer, and bring seven or eight young at a time. The Arabs eat them, and esteem them among the greatest delicacies.

Its ears are thin, erect, and broad ; its eyes full and dark ; its whiskers long ; its fore legs are one inch long ; its hind ones two and a quarter. On each of the fore feet, there are five toes ; the inner one, or thumb, is scarce apparent ; but that, as

well as the rest, is furnished with a sharp claw. The hind legs are long, thin, covered with short hair, and exactly resembling those of a bird. There are three long toes on each, covered above and below with hair; the middle one longest. There is on each a pretty long sharp claw.

Its length from nose to tail, is seven inches and a quarter; its tail is ten inches long, covered with very short coarse hair; but terminated with a thick black tuft, tipped with white. The upper part of the body is thin, as if compressed sideways; that about the rump and loins is large. It is covered with long hair, ash coloured at the bottom, and pale tawny at the ends. Its breast and belly are whitish. Across the upper part of the thighs there is an obscure dusky band, with long soft hair.

When taken, it emits a plaintive feeble note. It feeds on vegetables, and has great strength in its fore feet. The Arabs call it daman Israel, or the lamb of the Israelites. It is supposed to be the coney of Holy Writ. It is also the mouse of Isaiah, chap. lxvi. 17. It was forbidden food to the Israelites. Dr. Shaw met with it on mount Libanus, and distinguished it from the following species.

SIBERIAN JERBOA.

Of the Siberian jerboa there are three varieties, the greater, the middle, and the pigmy.

The greater Siberian jerboa has a truncated nose, edged with white. Its lower teeth are slender, and twice as long as the upper; its ears are large and pointed, tipped with white, and naked within; its hair is very soft, tawny on the back, and lower of a dark grey; its legs, and the underside of its body are white. The half of the tail next the

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body is covered with short whitish hairs ; the other half with long black hairs, and terminated with a white feather tuft, an inch long. On the hind legs, an inch above the feet, are two long toes, armed with nails ; the back part of each leg is naked. The length of the body is eight inches and a half ; of the tail ten. It is found from the Caspian Sea to the river Irtysh ; it is of the size of a rat ; it is of the colour of the former, except that the rump, on each side, is crossed with a white line.

The middle variety has its nose more lengthened, and its ears shorter and broader ; its tail is thicker, and not so elegantly tufted ; its hind legs are shorter ; and its coat is longer and thicker. It is found beyond lake Baikal, also in Barbary and Syria, and even as far as India.

The pigmy differs from the greater, in wanting the white circle round the nose, in having a less tuft to the tail, and the end just tipped with white. It agrees entirely in form, but is far inferior in size to even the middle variety. It inhabits the same countries with the greater.

These three agree in manners with the Egyptian species. Whether these ought to be reckoned different species instead of varieties, or whether they are some of them varieties of the Egyptian, is not yet ascertained.

CAPE JERBOA.

THE Cape jerboa has a short head, broad between the ears ; its mouth is placed far below the upper jaw ; the lower is very short. It has two great teeth in each. Its ears are thin and transparent, and one third shorter than those of the common rabbit. It has also great whiskers, and large eyes. Its fore legs are short ; it has five toes on each,

with a great protuberance next to the inner toe. The claws of the fore toes are crooked, and two-thirds longer than the toes themselves. It has four toes behind, with short claws. Its colour is tawny above; cinereous below, mixed with long hairs pointed with black. Two-thirds of the tail is tawny, the rest blackish, and full of hair. The length of the body fourteen, of the tail fifteen, of the ears near three inches. It inhabits the great mountains, far north of the Cape of Good Hope; and is called by the Dutch, the jumping hare. It is very strong, and will leap twenty or thirty feet at a time. It emits a grunting sound; sits upright like a squirrel, when it eats, with its legs extended horizontally, and its back bent. It uses its fore feet to bring food to its mouth; and burrows with them most expeditiously. In sleeping, it sits with its knees separate, and puts its head between its hind legs, and, with its fore legs, holds its ears over its eyes. It is the largest of the jerboas. It burrows in the ground like others of the genus. It is noticed by La Vaillant.

TORRID JERBOA.

THE torrid jerboa has naked oval ears; long whiskers; four toes on the fore feet; the hind feet are as long as the body, thick and strong, but thinly haired. It has five toes on each foot; scarcely any neck. The tail is also the length of the body, with very little hair upon it. The colour of the upper part of the body is yellow; of the lower white. It is of the size of a common mouse. It inhabits the Torrid Zone, and the sandy desert of Naryn, $46\frac{1}{2}^{\circ}$ north latitude. Its burrows are about an ell deep, and have three entries. It does not walk erect, like other jerboas, but runs with great rapidity.

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TAMARISK JERBOA.

THIS species, which was first described by Dr. Pallas, is about the size of the brown rat. It is an inhabitant of the most southern parts of the Caspian deserts, and probably of the warmer parts of Asia. It delights in low grounds and salt marshes, and burrows under the roots of the tamarisk bushes. The animal comes out by night to feed, and makes its principal repast on succulent maritime plants, as the salsola, &c. ; which, in the salt deserts it inhabits, are very plentiful. The head of this species is oblong ; the whiskers large ; the nose blunt, and the nostrils covered with a flap ; the eyes large ; the ears large, oval, and naked : the space round the nose and eyes, and beyond the ears, white ; the sides of the head and neck cinereous ; the back and sides yellowish grey ; the tips of the hairs brown ; the breast and belly white ; the tail ash-coloured, and annulated more than half-way from the base with rings of brown ; the hind legs are long in proportion to the fore legs, and the feet are longitudinally black beneath ; on the fore feet is a warty tubercle in place of the thumb. The length from nose to tail, is about six inches ; the tail not quite so long.

CANADIAN JERBOA.

THIS minute species is a native of Canada, and appears to have been first discovered by General Davies, who had an opportunity of examining it during his residence at Quebec, and who has described it in the fourth volume of the Transactions of the Linnæan Society. The description is as follows :

“ As I conceive there are very few persons,

however conversant with natural history, who may have seen or known, that there was an animal existing in the coldest parts of Canada, of the same genus with the Jerboa, hitherto confined to the warmer climates of Africa, I take the liberty of laying before this society the following observations, accompanied by a drawing of an animal of that kind, procured by myself in the neighbourhood of Quebec, during my last residence in that country. The specimens from which I made the drawing, are now in my collection. With respect to the food, or mode of feeding of this animal, I have it not in my power to speak with any degree of certainty, as I could by no means procure any kind of sustenance, that I could induce it to eat; therefore when caught, it only lived a day and a half. The first I was so fortunate to catch, was taken in a large field, near the falls of Montmorenci, and by its having strayed too far from the skirts of the wood, allowed myself, assisted by three other gentlemen, to surround it, and after an hours hard chase, to get it unhurt; though not before it was thoroughly fatigued, which might in a great measure accelerate its death. During the time the animal remained in its usual vigour, its agility was incredible for so small a creature. It always took progressive leaps of from three to four, and sometimes of five yards, although seldom above twelve or fourteen inches from the surface of the grass; but I have observed others in shrubby places, and in the woods among plants, where they chiefly reside, leap considerably higher. When found in such places, it is impossible to take them, from their wonderful agility, and their evading all pursuit, by bounding into the thickest parts of the cover they can find. With respect to the figure given of it in its dormant state, I have to observe, that the specimen was found by some

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workmen, in digging the foundation for a summer-house, in a gentleman's garden, about two miles from Quebec, in the latter end of May, 1787. It was discovered enclosed in a ball of clay, about the size of a cricket-ball, nearly an inch in thickness, perfectly smooth within, and about twenty inches underground. The man who first discovered it, not knowing what it was, struck the ball with his spade, by which means it was broken to pieces, or it would have been presented to me. How long it had been underground it is impossible to say; but as I never could observe these animals in any parts of the country after the beginning of September, I conceive they lay themselves up sometime in that month, or beginning of October, when the frost becomes sharp; nor did I ever see them again before the last week in May or beginning of June. From their being enveloped in balls of clay, without any appearance of food, I conceive they sleep during the winter, and remain for that term without sustenance. As soon as I conveyed this specimen to my house, I deposited it, as it was, in a small chip box, in some cotton, waiting with great anxiety for its waking; but that not taking place at the season they generally appear, I kept it until I found it begin to smell; I then stuffed it, and preserved it in its torpid position. I am led to believe its not recovering from that state, arose from the heat of my room during the time it was in the box, a fire having been constantly burning in the stove, and which, in all probability was too great for its respiration."

This animal, in the last edition of Mr. Pennant's History of Quadrupeds, is referred to the genus *mus*, and is described under the name of the Canadian rat.

HARE TRIBE.

THE generic character of the hares consists in their having two front teeth both above and below, the upper pair duplicate; two small interior ones standing behind the others; the fore feet with five, and the hinder with four toes.

These animals live entirely on vegetable food, and are all remarkably timid. They run by a kind of leaping pace, and in walking they use their hind feet as far as the heel. Their tails are either very short, (called in England scuts,) or else they are entirely wanting.

COMMON HARE.

THIS little animal is found throughout Europe, and indeed in most of the northern parts of the world. Being destitute of weapons of defence, it is endowed by Providence in a high degree with the sentiment of fear. Its timidity is known to every one; it is attentive to every alarm, and is, therefore, furnished with ears very long and tubular, which catch the remotest sounds. The eyes are so prominent as to enable the animal to see both before and behind.

The hare feeds in the evenings, and sleeps in his form during the day; and as he generally lies on the ground, his feet are protected, both above and below, with a thick covering of hair. In a moon-light evening many of them may frequently be seen sporting together, leaping about and pursuing each other; but the least noise alarms them, and they then scamper off, each in a different direction. Their pace is a kind of

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gallop, or quick succession of leaps; and they are extremely swift, particularly in ascending higher grounds, to which, when pursued, they generally have recourse; here their large and strong hind legs are of singular use to them. In northern regions, where, on the descent of the winter's snows, they would, were their summer fur to remain, be rendered particularly conspicuous to animals of prey, they change their yellow-grey dress in the autumn, for one perfectly white; and are thus enabled, in a great measure, to elude their enemies.

In more temperate regions they chuse in winter a form exposed to the south, to obtain all the possible warmth of that season; and in summer, when they are desirous of shunning the hot rays of the sun, they change this for one with a northerly aspect; but in both cases they have the instinct of generally fixing upon a place where the immediately surrounding objects are nearly the colour of their own bodies.

An animal so well formed for a life of escape might be supposed to enjoy a state of tolerable security; but as every rapacious creature is its enemy, it but very seldom lives out its natural term. Dogs of all kinds pursue it by instinct, and follow the hare more eagerly than any other animal. The cat and the weasel kinds are continually lying in ambush, and practising all their little arts to seize it; birds of prey are still more dangerous enemies, as against them no swiftness can avail, nor retreat secure; but man, an enemy far more powerful than all, prefers its flesh to that of other animals, and destroys greater numbers than all the rest. Thus pursued and persecuted on every side, the race would long since have been totally extirpated, did it not find a resource in its amazing fertility.

The hare multiplies exceedingly ; it is in a state of gendering at a few months old ; the females go with young but thirty days, and generally bring forth three or four at a time. As soon as they have produced their young, they are again ready for conception, and thus do not lose any time in continuing the breed. But they are in another respect fitted in an extraordinary manner for multiplying their kind ; for the female, from the conformation of her womb, is often seen to bring forth ; and yet to continue pregnant at the same time ; or, in other words, to have young ones of different ages in her womb together. Other animals never receive the male when pregnant, but bring forth their young at once. But it is frequently different with the hare ; the female, often, though already impregnated, admitting the male, and thus receiving a second impregnation. The reason in this extraordinary circumstance is, that the womb of these animals is divided in such a manner that it may be considered as a double organ, one side of which may be filled while the other remains empty. Thus these animals may be seen to couple at every period of their pregnancy, and even while they are bringing forth young, laying the foundation of another brood.

The young of these animals are brought forth with their eyes open, and the dam suckles them for twenty days, after which they leave her, and seek out for themselves. From this we observe, that the education these animals receive is but trifling, and the family connection but of a short duration. In the rapacious kinds the dam leads her young forth for months together ; teaches them the arts of rapine ; and, although she wants milk to supply them, yet keeps them under her care until they are able to hunt for themselves. But a long connection of this kind would be very unnecessary as

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well as dangerous to the timid animals we are describing; their food is easily procured; and their associations, instead of protection, would only expose them to their pursuers. They seldom, however, separate far from each other, or from the place where they were produced; but make each a form at some distance, having a predilection rather for the place, than each other's society. They feed during the night rather than by day, choosing the more tender blades of grass, and quenching their thirst with the dew. They live also upon roots, leaves, fruits, and corn, and prefer such plants as are furnished with a milky juice. They also strip the bark of trees during the winter, there being scarce any that they will not feed on, except the lime or the alder. They are particularly fond of birch, pinks, and parsley. When they are kept tame, they are fed with lettuce and other garden herbs; but the flesh of such as are thus brought up is always indifferent.

As their limbs are made for running, they easily outstrip all other animals in the beginning; and could they preserve their speed, it would be impossible to overtake them; but as they exhaust their strength at their first efforts, and double back to the place they were started from, they are more easily taken than the fox, which is a much slower animal than they. As their hind legs are longer than the fore, they always choose to turn up hill, by which the speed of their pursuers is diminished, while theirs remains the same. Their motions are also without any noise, as they have the sole of the foot furnished with hair; and they seem the only animals that have hair on the inside of their mouths.

They seldom live above seven or eight years at the utmost; they come to their full perfection in a year; and this multiplied by seven, as in other animals, gives the extent of their lives. It is said,

however, that the females live longer than the males ; of this M. Buffon makes a doubt ; but Goldsmith was assured that it is so. They pass their lives, in our climate, in solitude and silence ; and they seldom are heard to cry, except when they are seized or wounded. Their voice is not so sharp as the note of some other animals, but more nearly approaching that of the squalling of a child. They are not so wild as their dispositions and their habits seem to indicate ; but are of a complying nature, and easily susceptible of a kind of education. They are easily tamed. They even become fond and caressing, but they are incapable of attachment to any particular person, and never can be depended upon ; for, though taken never so young, they regain their native freedom at the first opportunity. As they have a remarkable good ear, and sit upon their hind legs, and use their fore paws as hands, they have been taught to beat the drum, to dance to music, and go through the manual exercise.

But their natural instincts for their preservation are much more extraordinary than those artificial tricks that are taught them. The hare, when it hears the hounds at a distance, flies for some time through a natural impulse, without managing its strength, or consulting any other means but speed for its safety. Having attained some hill or rising ground, and left the dogs so far behind that it no longer hears their cries, it stops, rears on its hinder legs, and at length looks back to see if it has not lost its pursuers. But these, having once fallen upon the scent, pursue slowly and with united skill, and the poor animal soon again hears the fatal tidings of their approach. Sometimes when sore hunted it will start a fresh hare, and squat in the same form ; sometimes it will creep under the door of a sheep-cot, and hide among the sheep ; sometimes

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it will run among them, and no vigilance can drive it from the flock; some will enter holes like the rabbit, which the hunters call going to vault; some will go up one side of the hedge, and come down the other; and it has been known that a hare sorely hunted has got upon the top of a quick-set hedge, and run a good way thereon, by which it has effectually evaded the hounds. It is no unusual thing also for them to betake themselves to furz bushes, and to leap from one to another, by which the dogs are frequently misled. However, the first doubling a hare makes is generally a key to all its future attempts of that kind, the latter being exactly like the former. The young hares tread heavier, and leave a stronger scent than the old, because their limbs are weaker; and the more this forlorn creature tires, the heavier it treads, and the stronger is the scent it leaves. A buck, or male hare, is known by its choosing to run upon hard highways, feeding farther from the wood-sides, and making its doublings of a greater compass than the female. The male having made a turn or two about its form, frequently leads the hounds five or six miles on a stretch; but the female keeps close by some covert side, turns, crosses, and winds among the bushes like a rabbit, and seldom runs directly forward. In general, however, both male and female regulate their conduct according to the weather. In a moist day they hold by the highways more than at any other time, because the scent is then strongest upon the grass. If they come to the side of a grove or spring, they forbear to enter, but squat down by the side thereof, until the hounds have overshot them; and then, turning along their former path, make to their old form, from which they vainly hope for protection.

Hares are divided, by the hunters, into moun-

tain and measled hares. The former are more swift, vigorous, and have the flesh better tasted; the latter chiefly frequent the marshes, when hunted keep among low grounds, and their flesh is moist, white, and flabby. When the male and female keep one particular spot, they will not suffer any strange hare to make its form in the same quarter, so that it is usually said, that the more you hunt, the more hares you shall have; for, having killed one hare, others come and take possession of its form. Many of these animals are found to live in woods and thickets, but they are naturally fonder of the open country, and are constrained only by fear to take shelter in places that afford them neither a warm sun, nor an agreeable pasture. They are, therefore, usually seen stealing out of the edges of the wood, to taste the grass, that grows shorter and sweeter in the open fields than under the shade of the trees; however, they seldom miss of being pursued; and every excursion is a new adventure. They are shot at by poachers; traced by their footsteps in the snow; caught in springes; dogs, birds, and cats, are all combined against them; ants, snakes, and adders, drive them from their forms, especially in summer; even fleas, from which most other animals are free, persecute this poor creature; and, so various are its enemies, that it is seldom permitted to reach even that short term to which it is limited by nature.

We shall now relate two anecdotes of the hare in its domestic state.

While Dr. Townson was at Göttingen, he had a young hare brought to him, which he took so much pains with as to render it more familiar than these animals commonly are. In the evenings it soon became so frolicsome, as to run and jump about his sofa and bed; sometimes in its play it would leap upon him, and pat him with its fore

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feet; or, while he was reading, even knock the book out of his hand. But whenever a stranger entered the room, the little creature always exhibited considerable alarm.

Mr. Borlase saw a hare that was so familiar as to feed from the hand, lie under a chair in a common sitting room, and appear in every other respect as easy and comfortable in its situation as a lap-dog. It now and then went out into the garden; but after regaling itself, always returned to the house as its proper habitation. Its usual companions were a grey-hound and a spaniel; both so fond of hare-hunting, that they often went out together without any person accompanying them. With these two dogs, this tame hare spent its evenings; they always slept on the same hearth, and very frequently it would rest itself upon them.

They are sometimes said to be found with horns.

In India the hare is hunted for sport; not only with dogs, but with hawks, and some species of the cat tribe. The flesh, though in esteem among the Romans, was forbidden by the Druids, and by the Britons of the early centuries. It is now, though very black, dry, and devoid of fat, much esteemed by the Europeans, on account of its peculiar flavour.

VARYING HARE.

This species has a very soft fur; which in summer is grey, with a slight mixture of tawny; the tail is always white. The ears are shorter, and the legs more slender, than those of the common hare; and the feet more closely and warmly furred. In size, this animal is always somewhat smaller.

Besides other cold parts of Europe, the varying

hare is found on the tops of the highest Scots hills, never descending to the plains. It will not mix with the last described species, though common in the same neighbourhood. It does not run fast; and when alarmed, takes shelter in clefts of the rocks.

In September it begins to change its grey coat, and resume its white winter's dress; in which only the tips and edges of the ears, and the soles of the feet, are black. In the month of April it again becomes grey. It is somewhat singular, that although this animal be brought into a house, and even kept in stoved apartments, yet it still changes its colour at the same periods as when among its native mountains.

In some parts of Siberia, the varying hares collect together in such multitudes, that flocks of five or six hundred of them may be seen migrating in spring, and returning in the autumn. Want of sustenance compels them to this; in winter they therefore quit the lofty hills, the southern boundaries of Siberia, and seek the plains and northern wooded parts, where vegetables abound; and towards spring they again return to their mountainous quarters.

In their white state the flesh is extremely insipid.

RABBIT.

THE hare and the rabbit, though so very nearly resembling each other in form and disposition, are yet distinct kinds, as they refuse to mix with each other. Mr. Buffon bred up several of both kinds in the same place; but from being at first indifferent, they soon became enemies; and their combats were generally continued until one of them was disabled or destroyed. However, though these experiments were not attended with success, we

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are assured that nothing is more frequent than an animal bred between these two, but which, like the mule, is marked with sterility. Nay, it has been actually known that the rabbit couples with animals of a much more distant nature; and there is at present in the museum at Brussels, a creature covered with feathers and hair, and said to be bred between a rabbit and a hen. The fecundity of the rabbit is still greater than that of the hare; and if we should calculate the produce from a single pair in one year, the number would be amazing. They breed seven times in a year, and bring eight young ones each time. On a supposition, therefore, that this happens regularly, at the end of four years, a couple of rabbits shall see a progeny of almost a million and a half. From hence we must justly apprehend being overstocked by their increase; but, happily for mankind, their enemies are numerous, and their nature inoffensive; so that their destruction bears a near proportion to their fertility.

But although their numbers be diminished by every beast and bird of prey, and still more by man himself, yet there is no danger of their extirpation. The hare is a poor, defenceless animal, that has nothing but its swiftness to depend on for safety; its numbers are, therefore, every day decreasing; and in countries that are well peopled, the species are so much kept under, that laws are made for their preservation. Still, however, it is most likely that they will be at last totally destroyed; and, like the wolf or the elk in some countries, be only kept in remembrance. But it is otherwise with the rabbit, its fecundity being greater, and its means of safety more certain. The hare seems to have more various arts and instincts to escape its pursuers, by doubling, squat-

ting, and winding; the rabbit has but one art of defence none, but in that one finds safety; by making itself a hole, where it continues a great part of the day, and breeds up its young; there it continues secure from the fox, the hound, the kite, and every other enemy.

Nevertheless, though this retreat be safe and convenient, the rabbit does not seem to be naturally fond of keeping there. It loves the sunny field and the open pasture; it seems to be a chilly animal, and dislikes the coldness of its underground habitation. It is, therefore, continually out, when it does not fear disturbance; and the female often brings forth her young at a distance from the warren, in a hole, not above a foot deep at the most. There she suckles them for about a month, covering them over with moss and grass, whenever she goes to pasture, and scratching them up at her return. It has been said, indeed, that this shallow hole without the warren, is made lest the male should attack and destroy her young; but Goldsmith says, the male himself attends the young there, leads them out to feed, and conducts them back upon the return of the dam. This external retreat seems a kind of country house, at a distance from the general habitation; it is usually made near some spot of excellent pasture, or in the midst of a field of sprouting corn. To this both male and female often retire from the warren; lead their young by night to the food which lies so convenient, and, if not disturbed, continue there till they are grown up. There they find a greater variety of pasture than near the warren, which is generally eaten bare; and enjoy a warmer sun, by covering themselves up in a shallower hole. Whenever they are disturbed, they then make their retreat of pleasure for one of safety; they fly

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to the warren with their utmost speed ; and if the way be short, there is scarce any dog, how swift soever, that can overtake them.

But it does not always happen that these animals are possessed of these external apartments ; they most usually bring forth their young in the warren, but always in a hole separate from the male. On these occasions, the female digs herself a hole, different from the ordinary one, by being more intricate ; at the bottom of which she makes a more ample apartment. This done, she pulls off from her belly a good quantity of her hair, with which she makes a kind of bed for her young. During the two first days she never leaves them ; and does not stir out but to procure nourishment, which she takes with the utmost dispatch ; in this manner suckling her young for near six weeks, until they are strong, and able to go abroad themselves. During all this time, the male seldom visits their separate apartment ; but when they are grown up, so as to come to the mouth of the hole, he then seems to acknowledge them as his offspring, takes them between his paws, smooths their skin, and licks their eyes ; all of them, one after the other, have an equal share in his caresses.

In this manner the rabbit, when wild, consults its pleasure and its safety ; but those that are bred up tame, do not take the trouble of digging a hole, conscious of being already protected. It has also been observed, that when people, to make a warren, stock it with tame rabbits, these animals, having been unaccustomed to the art of scraping a hole, continue exposed to the weather and every other accident without ever burrowing. Their immediate offspring also are equally regardless of their safety ; and it is not till after two or three generations, that these animals begin to find the necessity and convenience of an asylum, and prac-

tise an art which they could only learn from nature.

Rabbits of the domestic breed, like all other animals that are under the protection of man, are of various colours ; white, brown, black, and mouse colour. The black are the most scarce ; the brown, white, and mouse colour are in greater plenty. Most of the wild rabbits are of a brown and it is the colour which prevails among the species ; for in every nest of rabbits, whether the parents be black or white, there are some brown ones found of the number. But, in England there are many warrens stocked with the mouse colour kinds, which some say came originally from an island in the river Humber, and which still continue their original colour, after a great number of successive generations. A gentleman, who bred up tame rabbits for his amusement, gives the following account of their production :

"I began," says he, "by having but one male and female only ; the male was entirely white, and the female brown ; but, in their posterity, the number of the brown by far exceeded those of any other colour ; there were some white, some parti-coloured, and some black. It is surprising how much the descendants were obedient and submissive to their common parent ; he was easily distinguished from the rest by his superior whiteness ; and, however numerous the other males were, this kept them all in subjection. Whenever they quarrelled among each other, either for their females or provisions, as soon as he heard the noise he ran up to them with all dispatch, and upon his appearance, all was instantly reduced to peace and order. If he caught any of them in the fact, he instantly punished them as an example to the rest. Another instance of his superiority was, that having accustomed them to come to me with the call

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of a whistle, the instant this signal was given, I saw him marshalling them up, leading them the foremost, and then suffering them all to file off before him.

The rabbit, though less than the hare, generally lives longer. As these animals pass the greater part of their lives in their burrow, where they continue at ease and unmolested, they have nothing to prevent the regularity of their health, or the due course of their nourishment. They are, therefore, generally found fatter than the hare; but their flesh is, notwithstanding, much less delicate. That of the old ones, in particular, is hard, tough, and dry; but it is said, that in warmer countries, they are better tasted. This may very well be, as the rabbit, though so plentiful in Great Britain and Ireland, is nevertheless a native of the warmer climates; and has been originally imported into these kingdoms, from Spain. In that country, and in some of the islands in the Mediterranean, we are told, that they once multiplied in such numbers as to prove the greatest nuisance to the natives. They at first demanded military aid to destroy them; but soon after they called in the assistance of ferrets, which originally came from Africa, and these, with much more ease and expedition, contrived to lessen the calamity. In fact rabbits are found to love a warm climate, and to be incapable of bearing the cold of the north; so that in Sweden they are obliged to be littered in the houses. It is otherwise in all the tropical climates, where they are extremely common, and where they seldom burrow, as with us. The English counties that are most noted for these animals, are Lincolnshire, Norfolk, and Cambridgeshire. They delight in grounds of a sandy soil, which are warmer than those of clay; and which also furnish a softer and finer pasture.

The tame rabbits are larger than the wild ones, from their taking more nourishment, and using less exercise ; but their flesh is not so good, being more insipid and softer. In order to improve it they are chiefly fed upon clover and are stinted in their water ; for if indulged in too great plenty of moist food, they are apt, as the feeders express it, to grow rotten. The hair or fur is a very useful commodity, and is employed in England for several purposes, as well when the skin is dressed with it on, as when it is pulled off. The skins, especially the white, are used for lining clothes, and are considered as a cheap imitation of ermine. The skin of the male is usually preferred, as being the most lasting, but it is coarser ; that on the belly in either sex, is the best and finest. But the chief use made of rabbit's fur, is in the manufacture of hats ; it is always mixed in certain proportions, with the fur of the beaver ; and it is said to give the latter more strength and consistence.

The Syrian rabbit, like all other animals bred in that country, is remarkable for the length of its hair ; it falls along the sides in wavy wreaths, and is, in some places, curled at the end like wool ; it is shed once a year, in large masses ; and it often happens that the rabbit, dragging a part of its robe on the ground, appears as if it had got another leg, or a longer tail. There are no rabbits naturally in America ; however, those that have been carried from Europe, are found to multiply in the West India islands in great abundance. In other parts of that continent, they have animals that in some measure resemble the rabbits of Europe ; and which most European travellers have often called hares or rabbits, as they happen to be large or small.

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have a singular method of giving alarm. When danger is threatened, they thump on the earth with one of their hind feet ; and thus produce a sound that can be heard a great way by animals near the surface. This Dr. Darwin, from its singularity, and its aptness to the situation of the animals, concludes (though apparently upon false grounds) to be an artificial sign, and merely acquired from their having experienced its utility. He will not allow of any thing like an instinctive propensity.

We have the following account in Dr. Anderson's *Recreations of Agriculture*, of the regular production of a singular variety of the rabbit, with only one ear. "A gentleman of my acquaintance chanced to find a rabbit among his breed that had only one ear ; he watched the progeny of that creature, and among them he found one of the opposite sex that had only one ear also ; he paired these two rabbits together ; and has now a breed of rabbits one-eared, which propagate as fast, and as constant produce their like, as the two-eared rabbits, from which they were originally descended."

The flesh, which was forbidden to the Jews and Mahometans, is well known to be very delicate.

ALPINE HARE.

THE Alpine hare is about nine inches in length, It has a long head and whiskers ; and above each eye there are two very long hairs. The ears are short and rounded. The fur is dusky at the roots, of a bright bay at the ends, slightly tipped with white, and intermixed with long dusky hairs ; at first sight, however, the animals seem of a bright unmixed bay colour.

Their most southern residence is on the Altaic chain of mountains near lake Baikal, in Siberia; and they extend from thence as far northward as to Kamtschatka. They are always found in the middle regions of the snowy mountains, where these are clad with woods, and where herbs and moisture abound. They sometimes burrow between the rocks, but more frequently lodge in the crevices. They are generally found in pairs; but in bad weather they collect together, lie on the rocks, and whistle so much like the chirp of sparrows, as easily to deceive the hearer. On the report of a gun they run off into their holes; whence, however, if nothing more is heard, they soon return.

By the usual wonderful instinct of similar animals, they make a provision against the rigorous season in their inclement seats. A company of them, towards autumn, collect together vast heaps of favourite herbs and grasses, nicely dried; which they place either beneath the overhanging rocks, or between the chasms, or around the trunk of some tree. The way to these heaps is marked by a worn path: and in many places the plants appear scattered, as if to be dried in the sun and harvested properly. The heaps are formed like round, or conoid ricks; and are of various sizes, according to the number of the society employed in forming them. They are sometimes about a man's height, and usually three or four feet in diameter.

Thus they wisely provide their winter's stock; without which they must, in the cold season, infallibly perish; being prevented by the depth of snow, from quitting their retreats in quest of food. They select the most excellent vegetables, and crop them when in the fullest vigour. These they make into the best and greenest hay, by the

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very judicious manner in which they dry them. The ricks they thus form are the origin of fertility among the rocks ; for the relics, mixed with the dung of the animals, rot in the barren chasms, and create a soil productive of vegetation.

These ricks are also of great service to that part of mankind who devote themselves to the laborious employment of sable-hunting ; for, being obliged to go far from home, their horses would often perish for want, had they not the provision of these industrious little animals to support them. They are easily to be discovered by their height and form, even when covered with snow.

The people of Jakutz are said to feed both their horses and cattle on the remnant of the winter stock of these hares. As food, the Alpine hares are themselves neglected by mankind ; but they are the prey of the sables and the Siberian weasel.

AMERICAN HARE.

THESE have their ears tipped with grey ; the upper part of the tail black, the lower white ; the neck and body mixed with ash, rust colour, and black. Their legs are of a pale ferruginous colour ; their belly white. Their fore legs are shorter, and their hind ones longer in proportion than those of the common hare. They are about the size of the rabbit, as they measure eighteen inches in length, and weigh from three to four pounds and a half. They inhabit all parts of North America. In New Jersey, and the colonies to the south of that province, they retain their colour during the whole year. But to the northward, on the approach of winter, they change their short summer fur, for one very long, silky, and silvery, even to the roots, the edges of the ears only preserving their colour. At that time, it is in the highest season for the table, and

is of great use to those who winter in Hudson's Bay, where they are taken in vast abundance in springs made of brass wire, placed in hedges, constructed on purpose, with holes before the snares for the hares or rabbits to pass through.

They breed once or twice a year, and have from five to seven at a time. They do not migrate, but always haunt the same places. They do not burrow, but lodge under fallen timber, and in hollow trees. They breed in the grass; but, in the spring, shelter their young in hollow trees, to which they also run when pursued. The hunters force them out of those retreats, by means of a hooked stick, or by making a fire, and driving them out by the smoke.

BAIKAL HARE.

THE tail of the Baikal hare is longer than that of the rabbit; in the male, the ears are longer in proportion than those of the varying hare; its fur is of the same colour with that of the common hare. It is red about the neck and feet. Its tail is black above, and white beneath. The name here given it marks its country. It extends from the lake Baikal as far as Thibet. The Tanguts call it rangwo, and consecrate it to the spots of the moon. It agrees with the common rabbit in the colour of its flesh; but does not burrow. When pursued, it runs for shelter straight to the holes of the rocks, without any circuitous doublings, like those of the common hare; so that it agrees in nature, neither with the hare nor with the rabbit. The Mongols call it tolai. Its fur is bad, and is of no use in commerce. It is a larger species than the common hare. The eyes and end of its nose are bordered with white hairs.

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CAPE HARE.

THE long ears of the Cape hare are dilated in the middle. On the outside they are naked, and of a rose colour ; their inside and edges are covered with short grey hairs. Its crown and back are dusky, mixed with tawny ; its cheeks and sides ash coloured ; its breast, belly, and legs, rust coloured. Its tail, which it carries upwards, is of a pale ferruginous colour. It is of the size of a rabbit, and inhabits the country for three days march north of the Cape of Good Hope. It is there called the mountain hare ; for it lives only in the rocky mountains, and does not burrow. It is difficult to shoot it, as, on the sight of any one, it instantly runs into the fissures of the rocks. The same species probably extends as high as Senegal.

BRASILIAN HARE.

THE Brazilian hare, like the common kind, has very large ears, and a white ring round its neck. Its face is of a reddish colour ; its chin is white ; its eyes are black ; and its colour like that of the common hare, only a little darker. Its belly is whitish. It has no tail ; and some want the ring round the neck. They live in the woods ; are very prolific ; and are reckoned very good meat. They do not burrow.

They are found both in Brasil and in Mexico, where they are called citli.

VISCACCIA.

THIS species is said to have the general appearance of a rabbit, but has a very long bushy and bristly tail, like that of a fox, which the animal

also resembles in colour. The fur on all parts except the tail was soft, and is used by the Peruvians for the fabric of garments worn only by persons of distinction. In its manners, this animal resembles the rabbit, burrowing under ground, and forming a double mansion; in the upper of which it deposits its provisions, and sleeps in the other. It appears chiefly by night, and is said to defend itself when attacked by striking with its tail.

OGOTONA HARE.

THE ogotona hare has oblong oval ears, a little rounded; shorter whiskers than the Alpine hare; fur long and smooth; light grey in the middle; white at the ends, intermixed with a few dusky hairs; with a yellowish spot on the nose; and a space about the rump of the same colour. Its limbs also are yellowish on the outsides, and its belly white. It is only about six inches long. The male weighs from six ounces and a half, to seven and a quarter; the female from four, to four and three quarters. It inhabits Tartary, and lives in the open vallies, and on gravelly or rocky naked mountains, under heaps of stones; but in a sandy soil they burrow, leaving two or three entrances. Their holes run obliquely; in these they make their nests of short grass. They wander out chiefly in the night. Their voice is excessively shrill, in a note like that of a sparrow, twice or thrice repeated, but very easily to be distinguished from that of the Alpine hare. They are fond of the bark of a sort of service tree, and of the dwarf elm. Before the approach of severe cold, they collect great quantities of herbs, and fill their holes with them. Directed by the same instinct as the Alpine hare, they form, in autumn, their ricks of hay, of a hemispherical form, about a foot high

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and wide. In the spring, these elegant heaps disappear. They copulate in the spring. About the latter end of June, their young are observed to be full grown. They are the prey of hawks, magpies, and owls; but the cat manul makes the greatest havock among them. The ermine and polecat are equally their enemies.

CALLING HARE.

THIS species, called by the Tartars *ittsitskan*, or the barking mouse, has a longer head in proportion to its size, (which is very diminutive,) than is usual with hares. The head is thickly covered with fur, even to the tip of the nose. It has large whiskers; its ears are large and rounded; its legs are very short; and its soles are furred beneath. Its whole coat is very long, soft, and smooth; with a thick long fine down beneath, of a brownish lead colour. The hair is of the same colour, of a light grey towards the ends, and tipped with black. The lower parts of the body are hoary; the sides and ends of the fur are yellowish. Its length is about six inches; its weight from three ounces and a quarter, to four and a half. In winter they are scarcely two and a half.

They inhabit the south-east parts of Russia; but are found nowhere, in the east, beyond the river Obi. They delight in sunny vallies, and hills covered with herbs, especially those near the edges of woods, to which they run on any alarm. They live so concealed a life, as very rarely to be seen; but are often taken in winter, in the snares laid for the ermines. They choose, for their burrows, a dry spot amidst bushes, covered with a firm sod, preferring the western sides of the hills. Their place would scarcely be known, but for their excrements; and even those they drop, by a wise

instinct, under some bush, lest their dwelling should be discovered by their enemies among the animal creation.

It is their voice alone that betrays their abode. Their cry is like the piping of a quail, but deeper ; and so loud as to be heard at the distance of half a German mile. It is repeated by just intervals, thrice, four times, and often six. This cry is emitted at night, and in the morning ; but seldom in the day, except in rainy or cloudy weather. It is common to both sexes ; but the female is silent for some time after parturition, which happens about the beginning of May. She brings forth six at a time, blind and naked ; she suckles them often, and covers them carefully with the materials of her nest.

These most harmless and inoffensive creatures never go far from their holes. They feed, and make their little excursions by night ; drink often, sleep little, and are easily made tame. They will scarcely bite when handled ; yet the males have been observed, when in confinement, to attack each other, and to express their anger by a grunting noise.

MINUTE HARE.

This is by far the smallest of this genus, scarce exceeding the meadow mouse in size. It is a native of Chili, where it is said to be much esteemed as a delicate food, and is often kept in a domestic state. The body is of a conoid shape ; the ears small, pointed, and covered with hair ; the nose long ; the tail so short, as to be scarcely visible. This animal varies in colour, (at least when in a domestic state,) being either brown, white, or spotted. It produces about eight young at a time, and is said to breed almost every month. No figure of this

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animal appears to have been yet given, nor is its description by Molina and others quite so full and circumstantial as might be wished. It is said to be called in Chili by the name of cuy.

HYRAX TRIBE.

THE genus hyrax is distinguished from all the rest of the glires, by the remarkable circumstance of having four teeth in the lower jaw instead of two; these lower teeth are also of a different structure from the upper, being broad, short, and crenated, or denticulated at the top; the upper teeth in this genus are also less sharp, or pointed, than in the rest of the glires. In other particulars the genus hyrax seems most nearly allied to that of cavy.

CAPE HYRAX.

THIS species, well known at the Cape of Good Hope, where they are found in great abundance among the rocky mountains, like several of the others, burrows under ground, has a slow creeping pace, and a sharp voice, which is often repeated. It is distinguished by a thick head, full cheeks, and oval ears, half hid in its fur. Its head is of the colour of a hare; the top of the back dusky, mixed with grey; its sides and belly are of a whitish grey. Its toes are like those of the rest; and its tail is scarce visible. It is of the size of a rabbit; but the shape of the body is

thick and clumsy. Its flesh is esteemed very good meat.

SYRIAN HYRAX.

THIS species seems to have been first clearly and fully described by Mr. Bruce in the appendix to his celebrated Abyssinian Travels; if the description appears in some parts rather too minute, let it be considered that Mr. B. was treating of an animal almost unknown to European naturalists, and which, in consequence, seemed to demand a peculiar degree of exactness.

"This curious animal," says Mr. Bruce, "is found in Ethiopia, in the caverns of the rocks, or under the great stones in the Mountain of the Sun, behind the queen's palace at Koscam. It is also frequent in the deep caverns in the rocks, in many other parts of Abyssinia. It does not burrow or make holes as the rat and rabbit, nature having interdicted him this practice, by furnishing him with feet, the toes of which are perfectly round, and of a soft pulpy tender substance; the fleshy parts of the toes project beyond the nails, which are rather broad than sharp, very similar to a man's nails ill grown, and these appear rather given him for the defence of his soft toes, than for any active use in digging, to which they are by no means adapted.

"His hind foot is long and narrow, divided with two deep wrinkles, or clefts, in the middle, drawn across the centre, on each side of which the flesh rises with considerable protuberancy, and it is terminated by three claws; the middle one is the longest. The fore foot has four toes, three disposed in the same proportion as the hind foot; the fourth, the largest of the whole, is

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placed lower down on the side of the foot, so that the top of it arrives no further than the bottom of the toe next to it. The sole of the foot is divided in the centre by deep clefts, like the other, and this cleft reaches down to the heel, which it nearly divides. The whole of the fore foot is very thick, fleshy, and soft; and of a deep black colour, altogether void of hair, though the back or upper part of it is thick-covered like the rest of its body, down to where the toes divide, there the hair ends, so that these long toes very much resemble the fingers of a man.

"In the place of holes, it seems to delight in less close, or more airy places, in the mouths of caves, or clefts in the rock, or where one projecting, and being open before, affords a long retreat under it, without fear that this can ever be removed by the strength or operations of man. The ashkoko are gregarious, and frequently several dozens of them sit upon the great stones at the mouth of caves, and warm themselves in the sun, or even come out and enjoy the freshness of the summer evening. They do not stand upright upon their feet, but seem to steal along as in fear, their belly being nearly close to the ground, advancing a few steps at a time, and then pausing. They have something very mild, feeble, and timid, in their deportment; are gentle and easily tamed, though when roughly handled at the first, they bite very severely.

"This animal is found plentifully on Mount Libanus. I have seen him also among the rocks at the Cape Mahomet, which divides the Elanitic from the Heroopolitic gulf, or gulf of Suez. In all places they seem to be the same; if there is any difference it is in favour of the size and fatness which those in the Mountain of the Sun seem to enjoy above the others. What is his food I cannot

not determine with any degree of certainty. When in my possession, he ate bread and milk, and seemed to be rather a moderate than voracious feeder. I suppose he lives on grain, fruits, and roots. He seemed too timid and backward in his own nature to feed upon living food, or catch it by hunting.

"The total length of this animal, as he sits, from the point of his nose to the extremity of his body, is seventeen inches and a quarter. The length of his snout from the extremity of the nose to the occiput is three inches and three eighths. His upper jaw is longer than his under; his nose stretches half an inch beyond his chin. The aperture of the mouth when he keeps it close, in profile, is little more than an inch. The circumference of his snout around both his jaws, is three inches and three eighths, and around his head just above his ears eight inches and five eighths; the circumference of his neck is eight inches and a half, and its length one inch and a half. He seems more willing to turn his body altogether than his neck alone. The circumference of his body measured behind his fore legs is nine inches and three quarters, and that of his body, where greatest, eleven inches and three eighths; the length of his fore leg and toe is three inches and a half. The length of his hind thigh is three inches and one eighth, and the length of his hind leg to the toe taken together is two feet two inches; the length of the fore foot is one inch and three eighths; the length of the middle toe is six lines, and its breadth six lines also. The distance between the point of the nose and the first corner of the eye is one inch and five eighths! the length of his eye from one angle to the other four lines. The difference from the fore angle of his eye, to the root of his ear, is one inch and three lines, and the opening of his eye two

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lines and a half. His upper lip is covered with a pencil of strong hairs for mustachoes, the length of which are three inches and five eighths, and those of his eye-brows two inches and two eighths. He has no tail, and gives at first sight the idea of a rat, rather than of any other creature. His colour is a grey mixed with a reddish brown, perfectly like the wild or warren rabbit. His belly is white, from the point of the lower jaw to where his tail would begin, if that he had one. All over his body he has scattered hairs, strong and polished like his mustachoes; these are for the most part two inches and a quarter in length. His ears are round, not pointed. He makes no noise that ever I heard, but certainly chews the cud. To discover this was the principal reason of my keeping him alive: those with whom he is acquainted he follows with great assiduity. The arrival of any living creature, even of a bird, makes him seek for a hiding place; and I shut him up in a cage with a small chicken, after omitting to feed him a whole day; the next morning the chicken was unhurt, though the ashkoko came to me with great signs of having suffered with hunger. I likewise made a second experiment, by inclosing two smaller birds with him for the space of several weeks: neither were these hurt, though both of them fed, without impediment, of the meat that was thrown into his cage, and the smallest of these, a titmouse, seemed to be advancing in a sort of familiarity with him, though I never saw it venture to perch upon him; yet it would eat frequently, and at the same time, of the food upon which the ashkoko was feeding; and in this consisted chiefly the familiarity I speak of, for the ashkoko himself never shewed any alteration of behaviour upon the presence of the bird, but treated it with a kind of absolute indifference.

The cage, indeed, was large, and the birds having a perch to sit upon in the upper part of it, they did not annoy one another.

"In Amhara this animal is called *ashkoko*, which I apprehend is derived from the singularity of those long herinaceous hairs, which, like small horns, grow about his back, and which in Amhara are called *ashok*. In Arabia and Syria, he is called Israel's sheep, or *gannim Israel*, for what reason I know not, unless it is chiefly from his frequenting the rocks of Horeb and Sinai, where the children of Israel made their forty years' perigrination; perhaps this name obtains only among the Arabians. I apprehend he is known by that of *saphan* in the Hebrew, and is the animal erroneously called by our translators *cuniculus*, the rabbit or coney."

HUDSON'S BAY HYRAX.

THIS was first described by Mr. Pennant, and was in the Leverian Museum. Its colour is a cinereous brown, with the ends of the hairs white. It is a native of Hudson's Bay. Its size is nearly that of a common marmot; the two upper teeth are moderately large, and shaped like those of the Cape hyrax; the four lower are very strong, rather long than broad, and are very abruptly truncated, without any appearance of denticulations; the feet are tetradactylous; of a similar form to those of the Cape hyrax, but have rounded claws on all the toes. Nothing particular is known of the manners or natural history of this species.

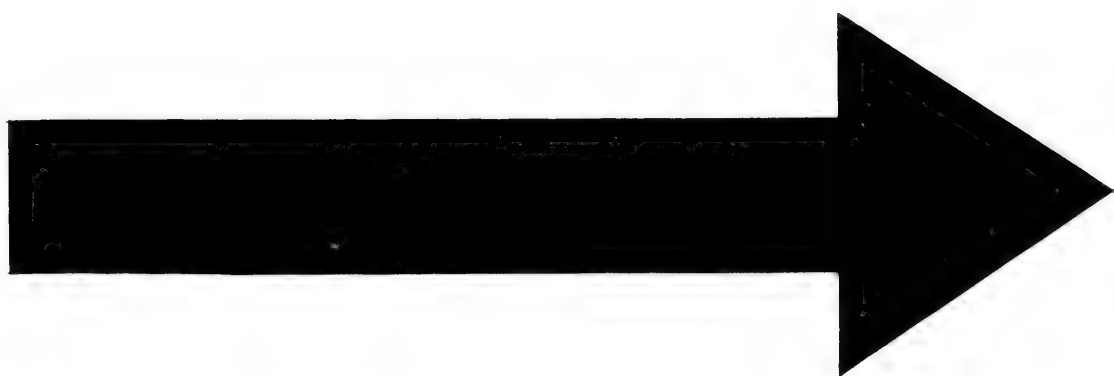
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CAMEL TRIBE.

ALL the animals of the camel tribe are mild and gentle in their disposition. In a wild state they are not to be caught without great difficulty, yet when taken young and trained to labour, are made very serviceable to mankind. There are reckoned to be seven species, two of which only are found on the old continent, the rest being confined to the Alpine countries of Chili and Peru. It is supposed that most, if not all of them, are gregarious, associating together in vast herds. The females have two teats, and seldom produce more than one young one at a birth. The hair of these animals is of a soft and silky texture ; and their flesh forms a very palatable food.

In the lower jaw of the camels there are six front teeth, which are somewhat thin and broad. The canine teeth are at a little distance both from these and the grinders ; in the upper jaw there are three, and in the lower two. The upper lip is cleft or divided.

These animals, like all the other genera of their order, are furnished with four stomachs, in consequence of which they not only live solely on vegetable food, but ruminate or chew the cud. They swallow their food unmasticated. This is received into the first stomach, where it remains some time to macerate ; and afterwards, when the animal is at rest, by a peculiar action of the muscles, it is returned to the mouth in small quantities, chewed more fully, and then swallowed a second time for digestion.



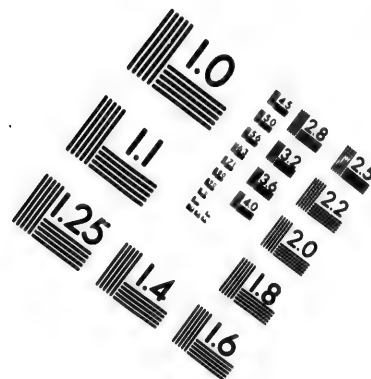
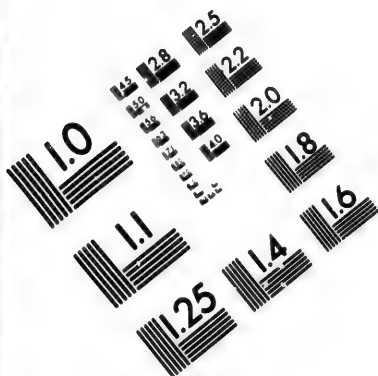
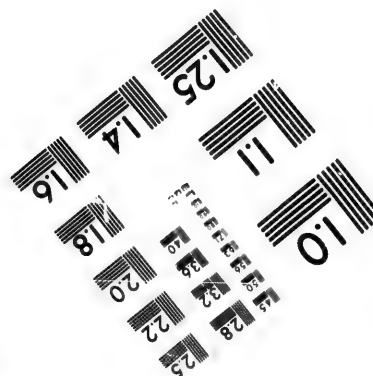
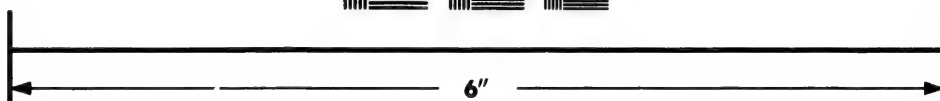
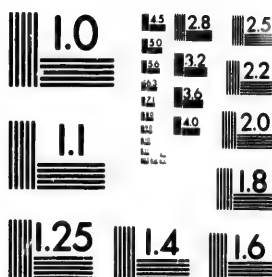


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ARABIAN CAMEL.

THE height of this animal from the top of its bunch to the ground, is about six feet six inches. Its head is small ; its ears are short ; its neck long, slender, and bending. Its hoofs are in part, but not thoroughly divided. The bottom of the foot is tough and pliant. The tail is long, and terminates in a tuft also of considerable length. On the legs this animal has six callosities ; four on the fore legs, and two on the hinder ; besides another on the lower part of the breast. These are the parts on which it rests. Its hair is fine, soft, and of considerable length ; longest indeed upon the bunch, the neck, and the throat. In the middle of the tuft, terminating the tail, the hair is soft and fine ; on the exterior parts, coarse, and often black. On the protuberance it is dusky ; over the rest of the body of a reddish ash colour.

Till very lately the camels have been supposed to possess, independently of the four stomachs common to ruminating animals, a fifth bag, which served them as a reservoir for holding water. From a preparation, however, in the collection of Mr. John Hunter, it appears that this fifth bag never existed but in idea. The second stomach is of a very peculiar construction, being formed of numerous cells several inches deep, having their mouths uppermost, and the orifices apparently capable of muscular contraction. When the animal drinks it probably has the power of directing the water into these cells, instead of letting it pass into the first stomach, and when these are filled, the rest of the water will go into that stomach. In this manner a quantity of water may be kept separate from the food, serving occa-

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The camel is the most temperate of all animals, and it can continue to travel several days without drinking. In those vast deserts, where the earth is every where dry and sandy, where there are neither birds nor beasts, neither insects nor vegetables, where nothing is to be seen but hills of sand and heaps of bones, there the camel travels, posting forward, without requiring either drink or pasture, and is often found six or seven days without any sustenance whatsoever. Its feet are formed for travelling upon sand, and utterly unfit for moist or marshy places; the inhabitants, therefore, find a most useful assistant in this animal, where no other could subsist, and by its means, cross those deserts with safety, which would be impassable by any other method of conveyance.

An animal, thus formed for a sandy and desert region, cannot be propagated in one of a different nature. Many vain efforts have been tried to propagate the camel in Spain; they have been transported into America, but have multiplied in neither. It is true, indeed, that they may be brought into these countries, and may, perhaps, be found to produce there; but the care of keeping them is so great, and the accidents to which they are exposed from the changeableness of the climate, are so many, that they cannot answer the care of keeping. In a few years also, they are seen to degenerate; their strength and their patience forsake them; and instead of making the riches, they become the burden of their keepers.

But it is very different in Arabia, and those countries where the camel is turned to useful purposes. It is there considered as a sacred animal, without whose help the natives could neither subsist, traffic, nor travel; its milk makes a part of

their nourishment ; they feed upon its flesh, particularly when young ; they clothe themselves with its hair, which it is seen to moult regularly once a year, and if they fear an invading enemy, their camels serve them in flight, and in a single day they are known to travel above a hundred miles. Thus, by means of the camel, an Arabian finds safety in his deserts ; all the armies upon earth might be lost in the pursuit of a flying squadron of this country, mounted upon their camels, and taking refuge in solitudes where nothing interposes to stop their flight, or to force them to wait the invader. Nothing can be more dreary than the aspect of these sandy plains, that seem entirely forsaken of life and vegetation ; wherever the eye turns, nothing is presented but a sterile and dusty soil, sometimes torn up by the winds, and moving in great waves along, which, when viewed from an eminence, resemble less the earth than the ocean ; here and there a few shrubs appear, that only teach us to wish for the grove that reminds us of the shade, without affording its refreshment ; the return of morning, which, in other places carries an idea of cheerfulness, here serves only to enlighten the endless and dreary waste, and to present the traveller with an unfinished prospect of his forlorn situation ; yet in this chasm of nature, by the help of the camel, the Arabian finds safety and subsistence. There are here and there found spots of verdure, which, though remote from each other, are, in a manner approximated by the labour and industry of the camel. Thus these deserts, which present the stranger with nothing but objects of danger and sterility, afford the inhabitant protection, food, and liberty. The Arabian lives independent and tranquil, in the midst of his solitudes ; and, instead of considering the vast solitudes spread round

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him as a restraint upon his happiness, he is, by experience, taught to regard them as the ramparts of his freedom.

The camel is easily instructed in the methods of taking up and supporting his burden ; their legs, a few days after they are produced, are bent under their belly ; they are in this manner loaded, and taught to rise ; their burden is every day thus increased, by insensible degrees, till the animal is capable of supporting a weight adequate to its force ; the same care is taken in making them patient of hunger and thirst : while other animals receive their food at stated times, the camel is restrained for days together, and these intervals of famine are increased in proportion as the animal seems capable of sustaining them.

In Turkey, Persia, Arabia, Barbary, and Egypt, their whole commerce is carried on by means of camels, and no carriage is more speedy, and none less expensive in these countries. Merchants and travellers unite themselves into a body, furnished with camels, to secure themselves from the insults of the robbers that infest the countries in which they live. This assemblage is called a caravan, in which the numbers are sometimes known to amount to above ten thousand, and the number of camels is often greater than those of the men ; each of these animals is loaded according to his strength, and he is so sensible of it himself, that when his burden is too great, he remains still upon his belly, the posture in which he is laden, refusing to rise till his burden be lessened or taken away. In general the large camels are capable of carrying a thousand weight, and sometimes twelve hundred ; the smaller from six to seven. In these trading journeys, they travel but slowly, their stages are generally regulated, and they seldom go above thirty, or at most about five and thirty miles

a day. Every evening, when they arrive at a stage, which is usually some spot of verdure, where water and shrubs are in plenty, they are permitted to feed at liberty ; they are then seen to eat as much in an hour, as will supply them for twenty-four ; they seem to prefer the coarsest weeds to the softest pasture ; the thistle, the nettle, the cassia, and other prickly vegetables, are their favourite food ; but their drivers take care to supply them with a kind of paste composition, which serves as a more permanent nourishment. As these animals have often gone the same track, they are said to know their way precisely, and to pursue their passage when their guides are utterly astray ; when they come within a few miles of their baiting place in the evening, they sagaciously scent it at a distance, and increasing their speed, are often seen to trot with vivacity to their stage.

The patience of this animal is most extraordinary ; and it is probable that its sufferings are great ; for when it is loaded, it sends forth most lamentable cries. At the slightest sign it bends its knees, and lies upon its belly, suffering itself to be loaded in this position ; by this practice the burden is more easily laid upon it, than if lifted up while standing ; at another sign it rises with its load, and the driver getting upon its back, between the two panniers, which, like hampers, are placed upon each side, he encourages the camel to proceed with his voice, and with a song. In this manner the creature proceeds contentedly forward, with a slow uneasy walk, of about four miles an hour, and when it comes to its stage, lies down to be unloaded as before.

M. Buffon seems to consider the camel to be the most domesticated of all creatures, and to have more marks of the tyranny of man imprinted on its form. He is of opinion, that this

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animal is not now to be found in a state of nature ; that the humps on its back, the callosities upon its breast and its legs, and even the great reservoir for water, are all marks of long servitude, and domestic constraint. The deformities he supposes to be perpetuated by generation ; and what at first was accident, at last becomes nature. However this be, the humps upon the back grow large in proportion as the animal is well fed, and if examined, they will be found composed of a substance not unlike the udder of a cow.

They have a very great share of intelligence ; and the Arabs assert that they are so extremely sensible of injustice and ill treatment, that when this is carried too far, the inflictor will not find it easy to escape their vengeance ; and that they will retain the remembrance of an injury till an opportunity offers for gratifying their revenge. Eager, however, to express their resentment, they no longer retain any rancour, when once they are satisfied ; and it is even sufficient for them to believe they have satisfied their vengeance. Accordingly, when an Arab has excited the rage of a camel, he throws down his garments in some place near which the animal is to pass, and disposes them in such a manner that they appear to cover a man sleeping under them. The animal recognizes the clothes, seizes them in his teeth, shakes them with violence, and tramples on them in a rage. When his anger is appeased, he leaves them, and then the owner of the garments may make his appearance without any fear, load, and guide him as he pleases.

The mode in which loaded camels were made to cross the Nile, attracted the particular attention of Mr. Norden, as extremely singular. A man, he says, swam before, with the bridle of the first camel in his mouth ; the second camel was tied to the tail of the first, and a third to the tail of the

second : another man, sitting on a truss of straw, brought up the rear, and, by his directions, was employed in keeping the second and third camels in their course.

Few travellers have ever had greater occasion to try the perseverance of the camel, and receive all the services which this animal is capable of affording, than Mr. Bruce, on his return from the court of Abyssinia to Cairo. On his way between Sennaar and Syene, in the deserts east of the Nile, after a long and dreary journey, in which he and his attendants had exhausted their provisions, to the last remains of "their miserable stock of black bread and dirty water ;" the strength of his camels was so far overcome, or so much were they benumbed by cold, that no arts nor efforts could raise them from the ground ; or at least prevail with them to stand but two minutes without kneeling down again. In this hopeless situation, his only resource was, to kill two of those fainting animals, to draw out the water that remained in their stomachs for drink, each affording about four gallons, and take a part of their flesh for food. The same traveller relates, that the camels of the caravans, which travel from the Niger, across the desert of Selima, are said to take at once as much water as they need for forty days. He asserts as an unquestionable fact, that even an ordinary camel will live, upon occasion, fourteen or fifteen days without water.

Mankind owe also other benefits to this animal. The Arabs, and other nations among whom they are common, use their flesh and milk, not merely in cases of extreme necessity, but even for their ordinary food. The flesh is dry, but of an agreeable enough taste ; though, except for feasts, none are ever killed but the old, and those without any pains being taken to fat them. The milk is

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wholesome, nourishing, and antiseptic ; but always faintly acid in its taste. In the more temperate latitudes of Asia and Africa, the hair is of a silky fineness, and sells at a considerable price. It is wrought into some valuable stuffs. His skin is another article of great value. Camel's dung is the only fuel which travellers have to kindle their fires of, in the desert. If dry, it kindles instantaneously, and affords a strong heat, and a bright flame.

No wonder then, that the Arabians have, from the earliest ages, assiduously availed themselves of the services which this animal is qualified to afford. Six thousand camels were part of the immense wealth of the patriarch Job. To tend, to train, to improve the breed, and to multiply the numbers of their camels, is to this day the chief employment of many of the Arabians. In tracing the annals of remote antiquity, we cannot discover the period when camels existed only in a wild state. But so gentle an animal would, the instant he became known to man, be subjected to his authority. In Egypt, the camel has been perhaps as long known and serviceable as in Arabia. He is there used chiefly as a beast of burden. A loaded camel travels between Cairo and Suez, a journey of six and forty hours, without needing either food or water. The food on which the Egyptians sustain him, is bruised stones, or kernels of dates. The Persians have several excellent breeds of camels. Their strongest, which they call chotornain, carry a load, a thousand or eleven hundred pounds in weight. Those of a secondary character, called in Persia, chotor, in Arabia, jemal, and in Indostan, oatt, bear six or seven hundred. The feeblest race, named in Arabic, ragahill, carry at least five hundred. When the camel-drivers wish their camels to quicken their pace, they chant to them wild, irregular airs, or

beat rude tunes on small kettle-drums. The Persians have yet a more delicate, and better shaped breed, denominated, in their language, chotordor, or chotobaad ; and by the Arabians, deloul, or elmecharis. These they train to make long marches, and feed with choice and substantial food. In the English dominions in India, the temper of the camel is said to be so froward, and his motions so violent, that the days of his hircarah or groom are frequently shortened by the trouble and fatigue which he suffers in managing him. Wild camels are said to subsist still in the deserts, in the temperate latitudes of Asia.

Many of the above particulars, concerning the manners and uses of the camel with one bunch, or dromedary, regard also the next species, the Bactrian or Turkish camel, who is furnished with two bunches.

BACTRIAN CAMEL.

EXCEPT in having two bunches on the back instead of one, this species scarce differs from the preceeding. Their size, their colours, their qualities, their uses, are almost entirely the same.

Next after that which the bunches constitute, the most remarkable difference is, that the Arabian camel or dromedary thrives in the most torrid climates of Asia and Africa, where he is gentle, but slender, and almost destitute of hair ; whereas the camel inhabits the more temperate climates, and is often larger, and of superior strength, moves with a firmer step, and is covered with finer hair. Tartary, Turkey, and Persia, are the regions which the camel chiefly inhabits. Dromedaries are most numerous in Arabia and Barbary.

February is the season of copulation to these animals. The female is a year pregnant ; produces

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only one at a birth ; and suckles her young for two years. The Arabian merchants, every year, conduct troops of dromedaries into the provinces of Turkey and Persia ; where they procure camels to copulate with them ; and by thus crossing the breed, obtain a mongrel race, in which the vigour of the camel is united with the mild docility of the dromedary.

Wild camels are still found in the northern parts of India, and in the deserts on the confines of China. They are possibly descended from a domestic race that may have accidentally become wild. Dr. Russel relates, that except in caravans coming from Bagdad to Bassora, the camel with two bunches is scarce ever seen in Syria.

The Persian name of the camel is chotortork or boghor.

LLAMA.

In form and manners, this American quadruped bears so considerable a resemblance to the dromedary and camel of Asia and Africa, that notwithstanding the inferiority of its size, naturalists agree in considering it as a congeneric species. The llama is scarce four feet and a half high, to the top of the shoulders, and not more than six feet in length. His neck is arched, but not so much as the camel's. His back does not rise to so large a bunch. His tail is graceful. His feet are elegantly formed. He has a bunch on his breast, which constantly exudes a yellowish, oily matter. His hair is long and soft. His colours are a beautiful clouding of black, white, and a dusky yellow. His body is often swelled with a considerable depth of fat, immediately under the skin. His head is not armed with horns. His nose is short

His hoofs are divided. His eyes are large, black, and sparkling. In the structure of his stomach, he has four ventricles, one of which is cellular. He has neither cutting nor canine teeth in his upper jaw. His feet are armed behind with a sort of spur, which assists in supporting the animal on rugged, difficult ground. His wool or hair is long on his flank and belly, but short on his back, crupper, and tail.

His voice is a sort of neighing sound. Though naturally mild and inoffensive, he defends himself when teased or attacked, by butting, kicking, and squirting at his enemy, through a fissure in his upper lip, an acrid spittle, which inflames and blisters the skin. His motion is slow; he bears up his head, and walks on with a grave, regular, majestic pace. He eats but little; and scarce ever drinks. His food is the coarsest, and most ordinary plants. With the mildness, the llama possesses also the obstinacy of the camel. He cheerfully receives any load to which his strength is not unequal; and if the place to which his burden is to be conveyed be known to him, proceeds to it without a guide. But when overloaded, or fatigued with travelling, he squats down on his belly, with his feet under him; and no severity of blows will compel him to rise. Squeezing his testicles sometimes succeeds, when every other art has been tried in vain. By continued abuse, the poor animal is sometimes driven to despair, and strikes his head from side to side upon the ground, till he die.

The female llama goes five or six months with young; never produces more than one at a birth, and is furnished with two paps to suckle it. The young male becomes capable of procreation at the age of three years. The term of his life never extends much beyond fourteen years.

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Peru is the native country of the llama. He has been settled by nature, on the mountains of that elevated tract of country. The species at present abound through the whole extent of the kingdom of Peru, from Potosi to Carraccas; and the industry of the Spaniards has propagated them through other parts of their American dominions.

When the Spaniards first penetrated into South America, they were astonished to find it destitute of the domestic animals, to which they had been accustomed in Europe. The Indians had no horses, oxen, asses, or mules, to assist their industry. The llama and the paco were the only animals which they cultivated as domestic. And to see them use sheep, for such did these seem, as beasts of burden, heightened the contempt which their European visitants had conceived for their characters. There appeared a remarkable similarity between the temper and manners of the llama, and those of his Indian master. The same mildness, the same cool, phlegmatic temper, the same perseverance in labour distinguished both. Rude and inartificial as were the manners of the simple Peruvians; they had, however, learned, not only to load the llama, as a beast of burden, but also to yoke him in the plough.

The Spaniards, upon settling in Peru, soon found, that this species whom they had thought too pitiful to be cultivated as the principal domestic animal, was not ill qualified for the labours in which the nature of the country induced them to have recourse to its assistance. The roads were so rugged and uneven; that an animal, less sure-footed, or of a temper less cool and phlegmatic than the llama, could scarce travel along them with safety. For the labours of the mines, a creature of a more impetuous, generous spirit, would have been very ill qualified. The llama conveys

the ores of Potosi over the most rugged hills, and through the narrowest parts of the Andes. He fears not to descend precipices, and climb steep accents, where even man himself dares not accompany him. An hundred and fifty pounds is his ordinary load. The strongest carry two hundred. With this load, the animal will travel on for four or five days without indicating the smallest fatigue. He stops to rest, without waiting for the directions of his driver ; and obstinately reposes four and twenty or thirty hours, before he can be prevailed upon to resume his journey. Requiring but a small portion of food, he takes that by browsing as he travels, on any shrubs or herbage that happen to fringe his path. At night he only rests and ruminates.

Such are these animals in their domestic state ; but as they are found wild in very great numbers, they exhibit marks of great force and agility in their state of nature. The stag is scarcely more swift, or the goat, or the chamois a better climber. All its shapes are more delicate and strong ; its colour is tawny, and its wool is but short ; in their native forest they are gregarious animals, and are often seen in flocks of two or three hundred at a time. When they perceive a stranger, they regard him at first with astonishment, without marking any fear or surprise ; but shortly, as if by common consent, they snuff up the air, somewhat like horses, and at once, by a common flight, take refuge on the tops of the mountains ; they are fonder of the northern than the southern side of the Andes ; they often climb above the snowy tracts of the mountain, and seem vigorous in proportion to the coldness of their situation. The natives hunt the wild llama for the sake of its fleece. If the dogs surprise one upon the plain, they are generally successful ; but if once the llama obtains the rocky

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Besides serving as a beast of burden, the llama affords various articles of no small utility to human life. His wool, though of a strong, disagreeable scent, is used as a material for cloth. It forms, likewise, so thick a covering on the animal, that he needs not a saddle to protect his back under a load. His skin is of a very close texture ; and is accordingly made into shoes by the Indians, and used for harnesses by the Spaniards. The flesh, especially of the young llama, is wholesome and of a pleasant taste.

As our principal domestic animals, the horse, the ass, the sheep, and the goat, have, by the cares of the European settlers, been introduced into America ; so the llama has also been imported into Europe. But the climate of Spain, the country into which he has been brought, has always proved too hot for this animal. Norway, Scotland, or the summits of the Alps or Pyrenees, might perhaps prove more favourable ; the temperature of these regions approaching nearer to the cold of the Andes.

GUANACO.

In form and manners the guanaco so nearly resembles the llama, that he has been viewed by some eminent naturalists, as merely a llama in a wild state. But as, besides various other distinctions of character, the guanaco, whether tame or wild, constantly refuses to associate with the llama, we cannot hesitate to rank these animals as distinct species.

The guanaco inhabits that range of mountains in South America, called the Cordilleras. The

severities of winter oblige him to descend into the plains of Chili and Peru.

A full grown guanaco is about seven feet in length, and four feet three inches in height. His ears resemble those of a horse. His tail is formed like a stag's. The upper parts of his body are tawny; the lower white. He has no protuberance on his breast, no bunch on his back. His fore feet are longer than those behind. He moves with a sort of leaping pace.

This species are gregarious. On the summits of the Cordilleras, they often assemble in flocks of several hundreds. They are stronger, more active, and nimbler than the llama. Although in a state of liberty, they are not secure from the persecution of man. The value of their fleeces, which are rather long smooth hair than wool, renders them an object of profit to the Indian hunter. When he surprises them in places of easy access, he cannot fail of being successful in the chase. But give them time to escape among the precipitous cliffs, which are their favourite haunts; and both men and dogs must desist in disappointment from the pursuit. When young it is pursued with dogs, and when old caught with nooses. The flesh of the young animals is excellent, and that of the old is preserved with salt. They seem incapable of subsisting in either a warmer climate, or a thicker atmosphere, than that of the elevated region in which they at present abound.

PACO.

BESIDES the llama, the Indians, before the arrival of the Spaniards in South America, had domesticated no other animal but the paco.

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but much inferior in size, is covered with long, fine wool, sometimes entirely black, and sometimes of a brown colour, intermixed with yellow. It seems to bear nearly the same relation to the llama, as the ass bears to the horse. The llama bears a load of a hundred and fifty pounds; the paco is overloaded if more than fifty be laid upon him.

The paco, as well as the llama and the guanaco, is confined to that stupendous range of mountains, which terminates the southern extremity of the American continent. His fleece is an article of great value. It is manufactured into gloves, stockings, bed clothes, and carpets. Neither the beaver of Canada, the goat of Angora, nor the sheep of Caramania, affords a finer material for cloth than the paco. His wool is as soft as silk, and is sold at as high a price. His flesh is eaten, though not very delicate food.

VICUGNA.

In the vicugna, we have an animal which bears nearly the same relation to the paco, as the guanaco bears to the llama. In figure, and in the form of his tail, he somewhat resembles our common goat. But his neck is twenty inches in length; his head thick, short, and destitute of horns; his ears small, erect, and sharp-pointed. His wool is shorter, but still finer than that of the paco, of a beautiful rose colour, and of such a nature, that a dye may be easily fixed upon it. His belly often affords a bezoar.

This is a wild, but a gregarious animal. Like the llama, the guanaco, and the paco, he is confined within that lofty range of country, which bounds the southern continent of America. He climbs and leaps among the lofty cliffs of the Cor

allieras. The greatest numbers are found in the provinces of Chili, Coquimbo, and the Copiapo. Naturalists have generally regarded the vicugna as being no other than the paco in a wild state. But, however favourable circumstances, the intercourse of love never takes place between these two animals.

The vicugna is remarkably swift and timid, and formed to endure the severest extremities of cold. It is scarce possible to tame one of these creatures. Their fleeces are a very alluring prize to the Indian hunters. Their flesh too is delicate and juicy. The method of taking them is to drive a flock, or as many as possible, into some narrow defile, surrounded to the height of three or four feet, with cords, hung with small pieces of linen or woollen cloth; these wave in the wind, and so fright and confound the timid animals, that they cannot possibly make their escape.

CHILIHUQUE.

THIS species, which inhabits Peru and Chili, is described as measuring about six feet in length, and about four in height. It is covered with woolly hair, and in its general appearance is not unlike a ram. The ears are flaccid, or pendulous; the neck and legs long; the tail like that of a sheep, but shorter in proportion: the wool is very soft, and the colour of the animal is said to vary in different individuals, being either brown, black, ash colour or white.

This animal was employed by the ancient inhabitants of Chili as a beast of burden, as well as in ploughing. Its wool was also used in the manufacture of a fine silky cloth or stuff; but this is now said to have given place to the introduction of

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MUSK TRIBE.

THE musk animals are inhabitants, almost exclusively, of India, and the Indian isles. Two or three of the species are so exceedingly small, as scarcely to equal a rabbit in size. They are very gentle, but excessively timid; on the appearance of a man they fly with precipitation into the recesses of their native wilds. Like the camels they have no horns.

In their lower jaw they have eight front teeth; and in the upper jaw two long tusks, one on each side, which project out of the mouth.

TIBETIAN MUSK.

THE present species, the principal one of the tribe, is destitute of horns. The ears are somewhat large, the neck thick, and the hair on the whole body long, upright, and thick set. Each hair is undulated, the tip ferruginous, the middle black, and the bottom cinereous. The limbs are very slender, and of a full black colour; and the tail is so short, as to be scarcely visible. The length of the male is about three feet, and that of the female about two feet and a quarter; and their average weight is from twenty-five to thirty pounds.

The Tibetan musk is a native of many parts of Asia, and is found throughout the whole king-

dom of Tibet. It lives retired among the highest and rudest mountains. Except in autumn it is a solitary animal; but at this season large flocks collect in order to change their place, being driven southward by the approaching cold. During this migration the peasants lie in wait for them, and either take them in snares, or kill them with arrows and bludgeons. At these times they are often so meagre and languid from hunger and fatigue as to be taken without much difficulty.

They are gentle and timid, having no weapons of defence except their tusks. Their activity is very great, and they are able to take astonishing leaps over the tremendous chasms of the rocks. They tread so lightly on the snow, as scarcely to leave a mark, while the dogs that are used in pursuing them, sink in, and are frequently obliged to desist from the chase. In a state of captivity they live but a very short time. They feed on various vegetables of the mountains. They are usually taken in snares, or shot by cross-bows placed in their tracks, with a string from the trigger for them to tread on and discharge the bow. Sometimes they are shot with bows and arrows. Their chase is exceedingly laborious.

In an oval receptacle about the size of a small egg, is contained the well known drug called musk. This hangs from the middle of the abdomen, and is peculiar to the male animal. A full grown male will yield a drachm and a half, and an old one two drachms. The bag is furnished with two small orifices, the one naked and the other covered with oblong hairs. Gmelin tells us, that on squeezing this bag, he forced the musk through the apertures, in the form of a brown fatty matter. The hunters cut off the bag and tie it up for sale, but often adulterate the contents by mixing them with other matter to increase their

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weight. The musk is even frequently taken entirely out, and a composition of the animal's blood and liver, (for this drug has much the appearance of clotted blood,) is inserted in its stead; but when the bags are opened, the imposition is easily detected. The deceit, however, most commonly practised, is that of putting into the bags little bits of lead, in order to augment the weight. The animals should be found in eastern countries in great numbers, for Tavernier informs us, that in one journey he collected seven thousand six hundred and seventy-three musk bags.

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It is generally asserted, that when the musk bag is first opened, so powerful an odour comes from it, that every person present is obliged to cover his mouth and nose with several folds of linen, and that, notwithstanding this precaution, the blood will frequently gush from the nose. When the musk is fresh, a very small quantity in a confined place is insupportable; it causes giddiness in the head, and hemorrhages, which have sometimes proved fatal.

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This species are inhabitants of India; somewhat larger in size than the former: and distinguished by slender legs, oblong, erect ears, and the resemblance which their head bears, in shape, to that of a horse.

BRAZILIAN MUSK.

In size, this animal approaches to an equality with the European roebuck. Its back, sides, chest, and thighs, are of a bright rust colour; but the lower part of the belly, and the inside of the thighs white. Its eyes are large and black; its

ears four inches long ; the tail six inches long ; the legs slender, yet muscular.

These creatures, peculiar to Guiana and Brasil, are remarkable for their timidity, and for a correspondent lightness of form, and agility of motion. Like goats, they are sometimes seen standing with their four legs together on the point of a rock. The delicacy of their flesh draws upon them a number of enemies. The Indians, as well as the tigers, and other beasts of prey, all eagerly pursue them. Their safety is most endangered when they attempt to swim ; for their legs are but very ill adapted to that exercise. They are ranked in this genus, not as affording musk, but as wanting horns.

MEMINNA.

This animal is an inhabitant of Java and Ceylon. Its form is diminutive. It is not more than one foot five inches in length. Its whole weight is only five pounds and a half. Its ears are large and open ; its tail very short ; its sides and haunches are variegated with spots, and transverse bars of white on a cinereous olive ground. The rest of the upper part of its body is a cinereous olive, without spots. Its throat, breast, and belly are white.

JAVA MUSK.

PECULIAR to Java is another animal of this genus, equal in size to a rabbit, with remarkable slender, puny legs ; with its snout and ears bare, without pits in the groin, or under the eye ; having tufts on its knees ; and under its throat, two long divergent hairs. The neck is hoary, with an intermixture of yellow ; a black line marks the

crown of the head ; the general colour of the body is ferruginous ; the neck and belly are white, but the neck variegated with two dusky spots. The tail is of a moderate length, and terminates in a white tuft.

PYGMY MUSK.

THIS animal is an inhabitant of the continent of India, and the Oriental islands, rather than of Guinea. It is only nine inches and a half in length ; has two small tusks in its upper jaw ; large ears ; and a tail an inch long. Its belly is white, and the rest of its body tawny ; but the specimens vary in colour. Among the Malays, they are caught in great numbers, carried to market in cages, and sold at a very moderate price.

LEVERIAN MUSK.

THIS species, if such it really be, seems to have been first described by Seba, who assures us that it is a native of Surinam, and described it as of a ferruginous colour, thickly spotted with white, except on the head, breast, and belly. He is not very clear in his expressions relative to its size, but it seems to rank among the very small species, such as the Javan, pygmy, &c. The animal described and figured in the first volume of the Museum Leverianum, under the title of *moschus delicatulus*, or small spotted musk, appears to very nearly allied to that of Seba, that it is in all probability the same.

DEER TRIBE.

This is an active tribe, inhabiting principally wild and woody regions. In their contentions, both among each other and with the rest of the brute creation, these animals not only use their horns, but also strike very furiously with their fore feet. Some of the species are employed by mankind as beasts of draught. The flesh of the whole tribe is wholesome, and that of some of the kinds, under the name of venison, is accounted particularly delicious.

The horns are solid and branched. They are renewed every year; and while young are covered with a skin, which is extremely vascular, and clothed with a fine velvet fur, that dries, shrivels, and falls off when the horns have attained their full size. There are eight front teeth in the lower jaw. In general this tribe is destitute of canine teeth, but sometimes a single one is found on each side in the upper jaw.

ELK.

The elk, or moose deer, is found in Europe, America, and Asia, as far as Japan; but it is met with in greatest quantity in the northern parts of both continents, where it frequents the forests. It is often found larger than the horse, both in height and bulk; but the length of its legs, the bulk of the body, the shortness of the neck, and uncommon length of the head and ears, without any appearance of a tail, render its form very awkward. The hair of the male (which far exceeds the female in size), is black at the points, cinereous in

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the middle, and at the roots perfectly white. That of the female is of a sandy brown, but whitish under the throat, belly, and flank. The upper lip is square, very broad, deeply furrowed, and hangs much over the mouth; the nose is broad, and the nostrils extremely large and wide. The horns, which are found only on the males, have no brow-antlers, and the palms are extremely broad. They are shed annually, and some have been seen that weighed upwards of sixty pounds.

The legs of the elks are so long, and their necks so short, that they cannot graze on level ground, like other animals, but are obliged to browse the tops of large plants, and the leaves or branches of trees.

In all their actions and attitudes they appear very uncouth, and when disturbed never run, but only make off in a kind of trot, which the length of their legs enables them to do with great swiftness, and apparently with much ease. In their common walk they lift their feet very high, and they are able, without any difficulty, to step over a gate five feet in height.

Their faculty of hearing is supposed to be more acute than either their sight or scent, which renders it very difficult to kill them in the summer time, and the Indians have then no other method of doing this, but by creeping after them among the trees and bushes, till they get within gun shot. In winter, when the snow is so hard frozen that the natives can go upon it in their snow-shoes, they are able frequently to run them down, for their slender legs break through the snow at every step, and plunge them up to the belly. They are so tender-footed, and so short-winded, that a good runner will generally tire them in less than a day; there have been some, however, that have kept the hunters in chase for two days. On these occasions the

Indians in general take with them nothing more than a knife or bayonet, and a little bag, containing implements for lighting a fire. When the poor animals are incapable of further speed, they stand and keep their pursuers at bay with their head and fore feet : in the use of the latter of which they are so dexterous, that the Indians are generally obliged to lash their knives or bayonets at the end of a long stick, and stab the elk at a distance. Some who have neglected this necessary precaution, and rashly attempted to rush in upon them, have received very serious blows from their fore feet. When wounded they sometimes become furious, rush boldly on the hunters, and endeavour to tread them down ; in this case the men are frequently compelled to leave their outer garments, (on which the animals wreck their vengeance,) and escape into the trees.

In summer the elks frequent the margins of rivers and lakes, getting into the water in order to avoid the innumerable multitudes of musketoes and other flies that pester them during that season. They are often killed by the Indians, while they are crossing rivers, or swimming from the main land to islands. When pursued in this situation, they are the most inoffensive of all animals, never making any resistance. And the young ones are so simple, that, in North America, Mr. Hearne saw an Indian paddle his canoe up to one of them, and take it by the poll without the least opposition ; the poor harmless animal seeming, at the same time, as contented along-side the canoe, as if swimming by the side of its dam, and looking up in the faces of those who were about to become its murderers with the most fearless innocence ; using its fore feet almost every instant to clear its eyes of musketoes, which at the time were remarkably numerous.

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Sometimes the Indians assemble in multitudes in their canoes, and form with them a vast crescent towards the shore. Large parties then go into the woods, surround an extensive tract, let loose their dogs, and press, with loud hallooings, towards the water. The alarmed animals fly before the hunters, and plunge into the lake, where they are killed with lances or clubs, by the persons prepared for their reception in the canoes.

The Indians also sometimes inclose a large piece of ground with stakes, woven with branches of trees, which form two sides of a triangle, the bottom opening into a second inclosure completely triangular. In the opening are hung snares made of slips of raw hides. The deer are driven by a party in the woods, into the first inclosure, and some endeavouring to force their way into the farthest triangle, are caught in the snares by their neck or horns; and those which escape the snares, and pass the opening, meet their fate from the arrows of the hunters directed at them from all quarters.

The elks are the easiest to tame and domesticate of any of the deer kind. They will follow their keeper to any distance from home, and at his call return with him, without the least trouble, and without ever attempting to deviate from the path.

An Indian had, at the factory at Hudson's Bay, in the year 1777, two of them so tame, that when he was on his passage to Prince of Wales's Fort, in a canoe, they always followed him along the bank of the river; and at night or on any other occasion, when he loaded, they generally came and fondled on him, in the same manner as the most domestic animal would have done, and never offered to stray from the tents. He did not, however, possess these animals long, for he one day

crossed a deep bay in one of the lakes, in order to save a very circuitous rout along its bank, and expected the creatures would, as usual, follow him round, but unfortunately a night they did not arrive; and as the howling of wolves was heard in the quarter where they were, it is supposed they had been devoured by them, for they were never afterwards seen.

M. D'Obsonville mentions his having in his possession, while in the East-Indies, an animal which he calls a moose deer. From the warmth of that climate it seems very doubtful whether it was not some other species, but as we have no satisfactory proof of its being such, we shall recite his account. "I procured it" he says, "when only ten or twelve days old, and had it for about two years, without ever tying it up. I even let it run abroad, and sometimes amused myself with making it draw in the yard, or carry little burdens. It always came when called, and I found few signs of impatience, except when it was not allowed to remain near me. When I departed from the island of Sumatra, I gave it to Mr. Law, of Lauriston, the governor-general, an intimate friend. This gentleman, not having an opportunity of keeping it about his person, as I had done, sent it to his country house. Here being kept alone, and chained in a confined corner, it presently became so furious as not to be approached. Even the person who every day brought its food was obliged to leave this at a distance. After some months absence I returned; it knew me afar off, and as I observed the efforts it made to get at me, I ran to meet it; and never shall I forget the impression which the caresses and transports of this faithful animal made upon me. A friend, who was present at the meeting, could not forbear sympathizing with me, and partaking of my feelings."

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An attempt has been made at New York to render the elk useful in agricultural labours, which has been attended with success. Mr. Chancellor Livingston, the president of the New York Society, had two of these animals broken to the harness. Though they had been but twice bitted, and were two years old, they appeared to be equally docile with colts of the same age. They applied their whole strength to the draught, and went on a steady pace. Their mouths appeared very tender, and some care was necessary to prevent them from being injured by the bit. If, upon trial, it is found that the elks can be rendered useful in harness, it will be considerable acquisition to the Americans. As their trot is very rapid, it is probable that, in light carriages, they would out-travel the horse. They are also less delicate in their food than that animal, becoming fat on hay only. They are long-lived, and more productive than any beast of burden.

The Indians have a superstitious notion that there is an elk of such an enormous size, that eight feet in depth of snow is no impediment to its walking. That its hide is proof against weapons of every description; and that it has an arm growing out of its shoulder subservient to the same purposes as ours. They say also that this imaginary animal is attended by a vast number of other elks, which form his court, and render him every service that a sovereign can require of them. The Indians esteem the elk an animal of good omen, and believe that to dream of it often is an indication of long life.

When suddenly roused, and it is endeavouring to make its escape, the elk is observed at times to fall down, as if deprived for some moments of motion. Whether this be owing, as frequently has been imagined, to an epileptic fit, or whether it

merely arises from fear (as is sometimes observed to be the case in horses,) is not perhaps easy to determine. The fact, however, is too well authenticated to admit our doubting it. This has given rise to the popular superstition of attributing to the hoofs the virtue of an anti-epileptic medicine; and the Indians even still imagine that the elk has the power of curing itself of its own disorder, or of preventing an approaching fit, by scratching its ear with the hoof till it draws blood.

The flesh of the elk is good, but the grain is coarse, and it is much tougher than any other kind of venison. Mr. Hearne remarks, that the livers of these animals are never sound; and that, like the other deer, they have no gall. According to Mr. Pennant, the tongues are excellent, and the nose so like marrow, as to be esteemed the greatest delicacy produced in Canada. Their skins, when dressed by the natives, make excellent tent covers, and shoe-leather. They are of very unequal thickness; but some of the Indian women, who are acquainted with the manufacture of them, render them, by scraping, as even as a piece of thick cloth: and, when well dressed, they are very soft. The hair of the hams, which is of great length, is used in stuffing mattresses and saddles.

The females have from one to three young at a time, and generally produce them towards the latter end of April, or about the beginning of May.

REIN DEER.

THE rein-deer is found in most of the northern regions, both of Europe, Asia, and America. Its general height is about four feet and a half. The colour is brown above, and white beneath, but as the animal advances in age it often becomes of a

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grayish white. The space about the eyes is always black. The hair on the under part of the neck is much longer than the rest. The hoofs are long, large, and black. Both sexes are furnished with horns, but those of the male are much the largest. These are long, slender, and branched; furnished with brow-antlers, having widely expanded and palmated tips, directed forwards. To the Laplanders this animal is the substitute for the horse, the cow, the goat, and the sheep; and is their only wealth.

Lapland is divided into two districts, the mountainous and the woody. The mountainous part of the country is at best barren and bleak, excessively cold, and uninhabitable during the winter; still, however, it is the most desirable part of this frightful region, and is most thickly peopled during the summer. The natives generally reside on the declivity of the mountains, three or four cottages together, and lead a cheerful and social life. Upon the approach of winter, they are obliged to migrate into the plains below, each bringing down his whole herd, which often amounts to more than a thousand, and leading them where the pasture is in greatest plenty. The woody part of the country is much more desolate and hideous. The whole face of nature there presents a scene of trees without fruit, and plains without verdure. As far as the eye can reach, nothing is to be seen, even in the midst of summer, but barren fields, covered only with a moss, almost as white as snow; no grass, no flowery landscapes, only here and there a pine-tree, which may have escaped the frequent conflagrations by which the natives burn down their forests. But what is very extraordinary, as the whole surface of the country is clothed in white, so on the contrary, the forests seem to the last degree dark and gloomy. While

one kind of moss makes the fields look as if they were covered with snow, another kind blackens over all their trees, and even hides their verdure. This moss, however, which deforms the country, serves for its only support, as upon it alone the rein deer can subsist. The inhabitants, who, during the summer, lived among the mountains, drive down their herds in winter, and people the plains and woods below. Such of the Laplanders as inhabit the woods and the plains all the year round, live remote from each other, and having been used to solitude, are melancholy, ignorant, and helpless. They are much poorer also than the mountaineers ; for, while one of those is found to possess a thousand rein deer at a time, none of these are ever known to rear the tenth part of that number. The rein deer makes the riches of this people ; and the cold mountainous parts of the country agree best with its constitution. It is for this reason, therefore, that the mountains of Lapland are preferred to the woods ; and that many claim an exclusive right to the tops of hills covered in almost eternal snow. As soon as the summer begins to appear, the Laplander, who has fed his rein deer upon the lower grounds during the winter, then drives them up to the mountains, and leaves the woody country, and the low pasture, which at that season are truly deplorable. The gnats breed by the sun's heat in the marshy bottoms and the weedy lakes, with which the country abounds more than any other part of the world, are all upon the wing, and fill the whole air like clouds of dust in a dry windy day. The inhabitants, at that time, are obliged to daub their faces with pitch, mixed with milk, to shield their skins from their depredations. All places are then so greatly infested, that the poor natives can scarce open their mouths without fear of suffocation ; the insects

enter, from their numbers and minuteness, into the nostrils and the eyes, and do not leave the sufferer a moment at his ease. But they are chiefly enemies to the rein-deer ; the horns of that animal being then in their tender state, and possessed of extreme sensibility ; a famished cloud of insects instantly settle upon them, and drive the poor animal almost to distraction. In this extremity, there are but two remedies to which the quadruped, as well as its master, are obliged to have recourse. The one is, for both to take shelter near their cottage, where a large fire of tree-moss is prepared, which filling the whole place with smoke, keeps off the gnat, and thus, by one inconvenience, expels a greater ; the other is, to ascend to the highest summit of the mountains, where the air is too thin, and the weather too cold, for the gnats to come. There the rein deer are seen to continue the whole day, although without food, rather than to venture down to the lower parts, where they can have no defence against their unceasing persecutors.

Besides the gnat, there is also a gadfly, that, during the summer season, is no less formidable to them. This insect is bred under their skins, where the egg has been deposited the preceding summer ; and it is no sooner produced as a fly, than it again endeavours to deposit its eggs in some place similar to that from whence it came. Whenever, therefore, it appears flying over a herd of rein-deer, it puts the whole body, how numerous soever, into motion ; they know their enemy, and do all they can, by tossing their horns, and running among each other, to terrify or avoid it. All their endeavours, however, are too generally without effect ; the gadfly is seen to deposit its eggs, which, burrowing under the skin, wound it in several places, and often bring on an incurable dis-

order. In the morning, therefore, as soon as the Lapland herdaman drives his deer to pasture, his greatest care is to keep them from scaling the summits of the mountains where there is no food, but where they go merely to be at ease from the gnats and gadflies that are ever annoying them. At this time there is a strong contest between the dogs and the deer; the one endeavouring to climb up against the side of the hill, and to gain those summits that are covered in eternal snows; the other forcing them down, by barking and threatening, and, in a manner, compelling them into the places where their food is in the greatest plenty. There the men and dogs confine them; guarding them with the utmost precaution the whole day, and driving them home at the proper seasons for milking.

The female brings forth in the middle of May, and gives milk till about the middle of October. Every morning and evening, during summer, the herdaman returns to the cottage with his deer to be milked, where the women previously have kindled up a smoky fire, which effectually drives off the gnats, and keeps the rein deer quiet while milking. The female furnishes about a pint, which, though thinner than of the cow, is, nevertheless, sweeter, and more nourishing.

Upon the return of the winter, when the gnats and flies are no longer to be feared, the Laplander descends into the lower grounds; and as there are but few to dispute the possession of that desolate country, he has an extensive range to feed them in. Their chief, and almost their only food at that time, is the white moss already mentioned; which, from its being fed upon by this animal, obtains the name of the lichen *rangiferinus*. This is of two kinds; the woolly lichen, which covers almost all the desert parts of the country like

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snow; the other is black, and covers the branches of the trees in very great quantities. However unpleasant these may be to the spectator, the native esteems them as one of his choicest benefits, and the most indulgent gift of nature. While his fields are clothed with moss, he envies neither the fertility nor the verdure of the more southern landscape; dressed up warmly in his deer-skin clothes, with shoes and gloves of the same materials, he drives his herds along the desert, fearless and at ease, ignorant of any higher luxury than what their milk and smoke-dried flesh affords him. Hardened to the climate, he sleeps in the midst of ice; or awaking, does away his time with tobacco; while his faithful dogs supply his place, and keep the herd from wandering. The deer, in the mean time, with instincts adapted to the soil, pursue their food, though covered in the deepest snow. They turn it up with their noses, like swine, and, even though its surface be frozen and stiff, yet the hide is so hardened in that part, that they easily overcome the difficulty. It sometimes, however, happens, though but rarely, that the winter commences with rain, and a frost ensuing, covers the whole country with a glazed crust of ice. Then, indeed, both the rein deer and the Laplander are undone; they have no provisions laid up in case of accident, and the only resource is to cut down the large pine-trees that are covered with moss, which furnishes but a scanty supply; so that the greatest part of the herd is then seen to perish without a possibility of assistance. It sometimes also happens, that even this supply is wanting; for the Laplander often burns down his woods, in order to improve and fertilize the soil which produces the moss, upon which he feeds his cattle.

In this manner, the pastoral life is still continued

near the pole ; neither the coldness of the winter, nor the length of the nights ; neither the wildness of the forests, nor the vagrant disposition of the herd, interrupt the even tenor of the Laplander's life. By night and day he is seen attending his favourite cattle, and remains unaffected, in a season which would be speedy death to those bred up in a milder climate. He gives himself no uneasiness to house his herds, or to provide a winter subsistence for them ; he is at the trouble neither of manuring his grounds nor bringing in his harvest ; he is not the hireling of another's luxury ; all his labours are to obviate the necessities of his own situation ; and these he undergoes with cheerfulness, as he is sure to enjoy the fruits of his own industry. If, therefore, we compare the Laplander with the peasant of more southern climates, we shall have little reason to pity his situation ; the climate in which he lives is rather terrible to us than to him ; and as for the rest, he is blessed with liberty, plenty, and ease. The rein deer alone supplies him with all the wants of life, and some of the conveniences ; serving to show how many advantages nature is capable of supplying, when necessity gives the call. Thus the poor little helpless native, who was originally, perhaps, driven by fear or famine into those inhospitable climates, would seem, at first view, to be the most wretched of mankind ; but it is far otherwise ; he looks round among the few wild animals that his barren country can maintain, and singles out one from among them, and that of a kind which the rest of mankind have not thought worth taking from a state of nature ; this he cultivates, propagates, and multiplies ; and from this alone derives every comfort that can soften the severity of his situation.

The rein deer of this country are of two kinds,

the wild and the tame. The wild are larger and stronger, but more michievous than the others. Their breed, however, is preferred to that of the tame; and the female of the latter is often sent into the woods, from whence she returns home impregnated by one of the wild kind. These are fitter for drawing the sledge, to which the Laplander accustoms them betimes, and yokes them to it by a strap, which goes round the neck, and comes down between their legs. The sledge is extremely light, and shod at the bottom with the skin of a young deer, the hair turned to slide on the frozen snow. The person who sits on this, guides the animal with a cord, fastened round the horns, and encourages it to proceed with his voice, and drives it with a goad. Some of the wild breed, though by far the strongest, are yet found refractory, and often turn upon their drivers; who have then no other resource but to cover themselves with their sledge, and let the animal vent its fury upon that. But it is otherwise with those that are tame; no creature can be more active, patient, and willing; when hard pushed, they will trot nine or ten Swedish miles, or between fifty and sixty English miles, at one stretch. But, in such a case, the poor obedient creature fatigues itself to death, and if not prevented by the Laplander, who kills it immediately, it will die a day or two after. In general, they can go about thirty miles without halting, and this without any great or dangerous efforts. This, which is the only manner of travelling in that country, can be performed only in winter, when the snow is glazed over with ice; and although it be a very speedy method of conveyance, yet it is inconvenient, dangerous, and troublesome.

In order to make these animals more obedient, and more generally serviceable, they castrate them;

this operation the Laplanders perform with their teeth ; these become sooner fat when taken from labour ; and they are found to be stronger in drawing the sledge. There is usually one male left entire for every six females ; these are in rut from the feast of St. Matthew to about Michaelmas. At this time, their horns are thoroughly burnished, and their battles among each other are fierce and obstinate. The females do not begin to breed till they are two years old ; and then they continue regularly breeding every year till they are superannuated. They go with young above eight months, and generally bring forth two at a time. The fondness of the dam for her young is very remarkable ; it often happens, that when they are separated from her, she will return from pasture, keep calling around the cottage for them, and will not desist until, dead or alive, they are brought and laid at her feet. They are at first of a light brown ; but they become darker with age ; and at last the old ones are of a brown, almost approaching to blackness. The young follow the dam for two or three years ; but they do not attain their full growth until four. They are then broke in, and managed for drawing the sledge ; and they continue serviceable for four or five years longer. They never live above fifteen or sixteen years ; and when they arrive at the proper age, the Laplander generally kills them for the sake of their skins and their flesh. This he performs by striking them on the back of the neck with his knife, into the spinal marrow ; upon which they instantly fall, and he then cuts the arteries that lead to the heart, and lets the blood discharge itself into the cavity of the breasts.

There is scarce any part of this animal that is not converted to its peculiar uses. As soon as it begins to grow old, and sometimes before the rut, it is killed, and the flesh dried in the air. It is

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also sometimes hardened with smoke, and laid up for travelling provision, when the natives migrate from one part of the country to another. During the winter, the rein deer are slaughtered as sheep with us ; and every four persons in the family are allowed one rein deer for their week's subsistence. In spring they spare the herd as much as they can, and live upon fresh fish. In summer, the milk and curd of the rein deer makes their chief provision ; and, in autumn, they live wholly upon fowls, which they kill with a cross bow, or catch in springes. Nor is this so scanty an allowance ; since, at that time, the sea-fowls come in such abundance, that their ponds and springs are covered over. These are not so shy as with us, but yield themselves an easy prey. They are chiefly allured to those places by the swarms of gnats which infest the country during summer, and now repay the former inconveniences, by inviting such numbers of birds as supply the natives with food a fourth part of the year, in great abundance.

The milk, when newly taken, is warmed in a caldron, and thickened with rennet ; and then the curd is pressed into cheeses, which are little and well tasted. These are never found to breed mites as the cheese of other countries ; probably because the mite fly is not to be found in Lapland. The whey which remains is warmed up again, and becomes of a consistence as if thickened with the white of eggs. Upon this the Laplanders feed during the summer ; it is pleasant and well tasted, but not very nourishing. As to butter, they very seldom make any, because the milk affords but a very small quantity, and this, both in taste and consistence, is more nearly resembling to suet. They never keep their milk till it turns sour ; and do not dress it into the variety of dishes which the more southern countries are known to do. The

only delicacy they make from it is with wood-sorrel, which being boiled up with it, and coagulating, the whole is put into casks or deer skins, and kept under-ground to be eaten in winter.

The skin is even a more valuable part of this animal than either of the former. From that part of it which covered the head and feet, they make their strong snow shoes, with the hair on the outside. Of the other parts they compose their garments, which are extremely warm, and which cover them all over. The hair of these also is on the outside; and they sometimes line them with the fur of the glutton, or some other warm furred animal of that climate. These skins also serve them for beds. They spread them on each side of the fire, upon some leaves of the dwarf birch tree, and in this manner lie both soft and warm. Many garments made of the skin of the rein deer are sold every year to the inhabitants of the more southern parts of Europe; and they are found so serviceable in keeping out the cold, that even people of the first rank are known to wear them.

In short, no part of this animal is thrown away as useless. The blood is preserved in small casks, to make sauce with the marrow in spring. The horns are sold to be converted into glue. The sinews are dried, and divided so as to make the strongest kind of sewing thread, not unlike catgut. The tongues, which are considered as a great delicacy, are dried, and sold into the more southern provinces. The intestines themselves are washed like our tripe, and in high esteem among the natives. Thus the Laplander finds all his necessities amply supplied from this single animal; and he who has a large herd of these animals has no idea of higher luxury.

But although the rein deer be a very hardy and vigorous animal, it is not without its diseases. We

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have already mentioned the pain it feels from the gnat, and the apprehensions it is under from the gadfly. Its hide is often found pierced in a hundred places, like a sieve, from this insect, and not a few die in their third year from this very cause. Their teats also are subject to cracking, so that blood comes instead of milk. They sometimes take a loathing for their food ; and, instead of eating, stand still and chew the cud. They are also troubled with a vertigo, like the elk, and turn round often till they die. The Laplander judges of their state by the manner of their turning. If they turn to the right he judges their disorder but slight ; if they turn to the left, he deems it incurable. The rein-deer are also subject to ulcers near the hoof, which disqualifies them for travelling, or keeping with the herd. But the most fatal disorder of all is that which the natives call the suddataka, which attacks this animal at all seasons of the year. The instant it is seized with this disease, it begins to breathe with great difficulty ; its eyes begin to stare, and its nostrils to expand. It acquires also an unusual degree of ferocity, and attacks all it meets indiscriminately. Still, however, it continues to feed as if in health, but is not seen to chew the cud, and it lies down more frequently than before. In this manner it continues, every day consuming and growing more lean, till at last it dies from mere inanition ; and not one of these that are attacked with this disorder are ever found to recover.

Besides the internal maladies of this animal, there are some external enemies which it has to fear. The bears now and then make depredations upon the herd ; but of all their persecutors, the creature called the glutton is the most dangerous and the most successful. The war between these

is carried on not less in Lapland than in North America, where the rein deer is called the caribou, and the glutton the carcajou. This animal, which is not above the size of a badger, waits whole weeks together for its prey, hid in the branches of some spreading tree ; and when the wild rein deer passes underneath, it instantly drops down upon it, fixing its teeth and claws into the neck, just behind the horns. It is in vain that the wounded animal then flies for protection, that it rustles among the branches of the forest ; the glutton still holds its former position, and although it often loses a part of its skin and flesh, which are rubbed off against the trees, yet it still keeps fast, until its prey drops with fatigue and loss of blood. The deer has but only one method of escape, which is by jumping into the water ; that element its enemy cannot endure ; for, as we are told, it quits its hold immediately, and then thinks only of providing for its own proper security.

The rein deer are able to swim with such incredible force and swiftness across the widest rivers, that a boat with oars can scarcely keep pace with them. They swim with their bodies half above water, and will pass a river or a lake even in the coldest weather.

In Siberia, where they are extremely numerous, they meet with a more rough and savage usage than their fellows experience from the harmless Laplanders. In the woody districts, where springes, fire-arms, and spring-guns can be applied, the natives resort to such for either the taking or killing of this harmless animal ; but in open plains, where these contrivances would fail, many other means have been invented. Those adopted by the Samoydes seem the most uncommon.

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killing rein deer, and when they perceive a herd, they station the tame rein deer that they bring with them on an elevated plain to the windward. Then, from this place to as near the savage herd as they can venture to come without alarming them, they put into the snow long sticks, at small distances, and to each of them tie a goose's wing, which flutters about freely with the wind. This being done, they plant similar sticks and pinions on the other side, under the wind; and the rein deer, being busy with their pasture under the snow, and being chiefly guided by their scent, generally observe nothing of these preparations. When every thing is ready, the hunters separate; some hide themselves behind their snowy intrenchments, while others lie with bows and other weapons in the open air to the leeward, and others again go to a distance, and drive, by a circuitous route, the game between the terrific pinions. Scared by these, the wild rein deer run directly to the tame ones, which are standing by the sledges; but here they are alarmed by the concealed hunters, who drive them to their companions that are provided with arms, and these immediately commit terrible slaughter among them.

If it happens that a savage herd are feeding near a mountain, the hunters hang up all their clothes on stakes about the foot of the mountain, making also with the same frightful pinions a broad passage towards it, into which they drive the game. As soon as they are come into this path, the women go with their sledges directly across the farther end of it, shutting the rein deer in, who immediately run round the mountain, and at every turn are saluted by a shot from the hunters.

On these occasions it is necessary that a number of people should be present. The Samoydes,

therefore, have recourse to other inventions to deceive the caution of these animals. The marksman, for example, goes, clad in rein deer skins, stooping in the middle of five or six rein deer, trained for the purpose, which he leads by a rope fastened to his girdle; and he is enabled by this means to approach very near the wild herd without being betrayed.

In autumn, which is the rutting season, the hunters pick out a strong and vigorous buck from their droves, to whose antlers they tie nooses, and then turn him loose among the wild herd. The wild stag, on observing a strange rival, immediately rushes on to fight him. During the combat, he so entangles his antlers in the loops, that when he descries the hunter, and strives to escape, the tame buck strikes his head to the ground, and there pins his antagonist fast till the marksman can kill him.

All persons who have described the rein deer, have taken notice of a cracking noise which they make when they move their legs. This has been attributed to the animals separating and afterwards bringing together the divisions of their hoofs; which, as they inhabit a country generally covered with snow, are therefore admirably adapted to the surface they have most commonly to tread. The under part is entirely covered with hair, in the same manner that the claw of the ptarmigan is with feathery bristles, which is almost the only bird that can endure the rigour of the same climate.

The hoofs, however, are not only thus protected, but the same necessity which obliges the Laplanders to use snow shoes, makes the extraordinary width of the rein deer's hoofs to be equally convenient in passing over snow, as it prevents their sinking too deep, which they would be subject to

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eternally, did the weight of their body rest only on a small point. This quadruped has, therefore, an instinct to use a hoof of such a form in a still more advantageous manner, by separating it when the foot is to touch the ground, so as to cover a larger surface of snow. The instant, however, that the leg of this animal is raised, the width of the foot becomes inconvenient, especially when it is going against the wind; the hoof therefore, is then immediately contracted, and the collision of the parts occasions the snapping which is heard upon every motion of the animal.

Pontoppidan tells us, that the rein deer has over his eye-lids a kind of skin, through which it peeps, when otherwise, in hard showers of snow, it would be obliged to shut its eyes entirely. He however, seems to have mistaken this for, probably, a breathing-hole, somewhat similar to that near the eye of the fallow deer, and some of the species of antelope.

The rein deer cast their horns annually. The rudiments of the new horns are at first covered with a kind of woolly membrane, which the creature, after some time, rubs off. They also change their hair every spring, during which time they are very lean, and of little use.

Rein deer were formerly known in Iceland, but by order of governor Thodal, thirteen head were sent over from Norway in the year 1770, of which ten died from want of proper attention before they reached the place. The three remaining ones thrived exceedingly well, and in the first two years had several fawns. They have there their proper food, for Iceland abounds with all those mosses, to which these animals have so great a partiality.

Sir Henry George Liddell, bart. brought with him from Lapland, in the year 1786, five rein deer to England, which he kept at his seat at Easington

Castle in Northumberland. They bred, and there was every prospect that they would succeed and even become prolific; but, unfortunately, some of them were killed, and the others died in consequence of a disorder similar to that called the rot in sheep, supposed to have been occasioned by the richness of the grass on which they were fed.

STAG.

THE stag is an animal of a stately elegant form. When full grown, he is commonly between four and five feet high. Often, when he enjoys abundance of food, and lives undisturbed by mankind or the beasts of prey, he attains a much larger size. His legs are slender and elegant; his tail is short; his ears large and pointed; his horns lofty and branchy. The hind is of a smaller and more slender form, and destitute of horns. A reddish brown colour, which has gained this species the appellation of red deer, distinguishes the upper part of the body; the hinder part of the neck, and the space between the shoulders, are marked with a black list; some part of the face is commonly black; the belly and the lower side of the tail are white. Sometimes we see yellow stags; and sometimes, but very seldom, a white one.

If we compare the stag and the bull, as to shape and form, no two animals can be more unlike; and yet, if we examine their internal structure, we shall find a striking similitude between them. Indeed their differences, except to a nice observer, will scarcely be perceivable. All of the deer kind want the gall bladder; their kidneys are formed differently; their spleen is also proportionably larger; their tail is shorter; and their horns, which are solid, are renewed every year. Such are the dis-

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criminations between two animals, one of which is among the swiftest, and the other the heaviest of the brute creation.

The stag is one of those innocent and peaceable animals that seems made to embellish the forest, and animate the solitudes of nature. The easy elegance of his form, the lightness of his motion, those large branches that seem made rather for the ornament of his head than its defence, the size, the strength, and the swiftness of this beautiful creature, all sufficiently rank him among the first of quadrupeds, among the most noted objects of human curiosity.

The stag, or hart, whose female is called the hind, and the young a calf, differs in size and in horns from the fallow deer. He is much larger, and his horns are round; whereas in the fallow kind they are broad and palmated. By these the animal's age is known. The first year the stag has no horns, but a horny excrescence, which is short, rough, and covered with a thin, hairy skin. The next year the horns are single and straight; the third year they have two antlers, three the fourth, four the fifth, and five the sixth; this number is not always certain, for sometimes there are more, and often less. When arrived at the sixth year, the antlers do not always increase; and although the number may amount to six or seven on each side, yet the animal's age is then estimated rather from the size of the antlers, and the thickness of the branch which sustains them, than from their variety. These horns, large as they seem, are, notwithstanding, shed every year, and new ones come in their place. The old horns are of a firm, solid texture. But while young, nothing can be more soft or tender; and the animal, as if conscious of his own imbecility at those times, instantly upon shedding his former horns, retires

from the rest of his fellows, and hides himself in solitudes and thickets, never venturing out to pasture, except by night. During this time, which most usually happens in the spring, the new horns are very painful, and have a quick sensibility of any external impression. The flies, &c., are extremely troublesome to him. When the old horn is fallen off, the new does not begin immediately to appear; but the bones of the skull are secured only with a transparent periosteum of skin, which, as anatomists teach us, covers the bones of all animals. After a short time, however, this skin begins to swell, and to form a soft tumour, which contains a great deal of blood, and which begins to be covered with a downy substance that has the feel of velvet, and appears nearly of the same colour with the rest of the animal's hair. This tumour every day buds forward from the point like the graft of a tree; and, rising by degrees from the head, shoots out the antlers on either side, so that in a few days, in proportion as the animal is in condition, the whole head is completed. However, as was said above, in the beginning, its consistence is very soft, and has a sort of bark, which is no more than a continuation of the integument of the skull. It is velvety and downy, and every where furnished with blood-vessels, that supply the growing horns with nourishment. As they creep along the sides of the branches, the print is marked over the whole surface; and the larger the blood-vessels, the deeper these marks are found to be: from hence arises the inequality of the surface of the deer's horns; which, as we see, are furrowed all along the sides, the impressions diminishing towards the point, where the substance is as smooth and as solid as ivory. But it ought to be observed, that this substance, of which the horns are composed,

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begins to harden at the bottom while the upper part remains soft, and still continues growing; from whence it appears that the horns grow differently in deer from those of sheep or cows; in which they are always seen to increase from the bottom. However, when the whole head has received its full growth, the extremities then begin to acquire their solidity; the velvet covering, or bark, with its blood-vessels, dry up, and then begin to fall; and this the animal hastens, by rubbing its antlers against every tree it meets. In this manner, the whole external surface being stripped off by degrees, at length the whole head acquires its complete hardness, expansion and beauty.

It would be a vain task to inquire into the cause of the annual production of these horns; it is sufficient to observe, that if a stag be castrated when its horns are fallen off they will never grow again; and, on the contrary, if the same operation be performed when they are on, they will never fall off. If only one of his testicles are taken out, he will want the horn on that side; if one of the testicles only be tied up, he will want the horn of the opposite side. The increase of their provision also tends to facilitate the growth and the expansion of the horns; and M. Buffon thinks it possible to retard their growth entirely by greatly retrenching their food. As a proof of this, nothing can be more obvious than the difference between a stag bred in fertile pastures and undisturbed by the hunter, and one often pursued and ill-nourished. The former has his head expanded, his antlers numerous, and the branches thick; the latter has but few antlers, the traces of the blood-vessels upon them are but slight, and the expansion but little. The beauty and size of their horns, therefore, mark their

strength and their vigour ; such of them as are sickly, or have been wounded, never shooting out that magnificent profusion so much admired in this animal. Thus the horns may, in every respect, be resembled to a vegetable substance, grafted upon the head of an animal. Like a vegetable they grow from the extremities ; like a vegetable they are for a while covered with a bark that nourishes them ; like a vegetable they have their annual production and decay ; and a strong imagination might suppose that the leafy productions on which the animal feeds, go once more to vegetate in his horns.

About the beginning of spring, all of this kind are seen to shed their horns, which fall off of themselves ; though sometimes the animal assists the efforts of nature, by rubbing them against a tree. It seldom happens that the branches on both sides fall off the same time, there often being two or three days between the dropping of the one and the other. The old stags usually shed their horns first ; which generally happens towards the latter end of February, or the beginning of March. Those of the second head, (namely, such as are between five and six years old) shed their horns about the middle or latter end of March ; those still younger, in the month of April ; and the youngest of all, not till the middle or latter end of May ; they generally shed them in pools of water, whither they retire from the heat ; and this has given rise to the opinion of their always hiding their horns. These rules, though true in general, are yet subject to many variations ; and universally it is known that a severe winter retards the shedding of the horns. The horns of the stag generally increase in thickness and in height from the second year of its age to the eighth. In this state of perfection they continue during the

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vigour of life ; but as the animal grows old, the horns feel the impressions of age, and shrink like the rest of the body. No branch bears more than twenty or twenty-two antlers, even in the highest state of vigour : and the number is subject to great variety ; for it happens that the stag at one year, has either less or more than the year preceding, in proportion to the goodness of his pasture, or the continuance of his security, as these animals seldom thrive when often roused by the hunters. The horns are also found to partake of the nature of the soil ; in the more fertile pastures they are large and tender ; on the contrary, in the barren soil, they are hard, stunted, and brittle. As soon as the stags have shed their horns, they separate from each other, and seek the plainer parts of the country, remote from every other animal, which they are utterly unable to oppose. They then walk with their heads stooping down, to keep their horns from striking against the branches of the trees above. In this state of imbecility they continue near three months before their heads have acquired their full growth and solidity ; and then, by rubbing them against the branches of every thicket, they at length clear them of the skin which had contributed to their growth and nourishment. It is said by some that the horn takes the colour of the sap of the tree against which it is rubbed ; and that some thus become red, when rubbed against the heath ; and others brown, by rubbing against the oak ; this, however, is a mistake, since stags kept in parks where there are no trees, have a variety in the colour of their horns, which can be ascribed to nothing but nature.

This animal may differ in the term of his life according to the goodness of his pasture, or the undisturbed repose he happens to enjoy. These are advantages that influence not only his age, but his

size and his vigour. The stags of the plains, the valleys, and the little hills, which abound in corn and pasture, are much more corpulent and much taller than such as are bred on the rocky waste, or the heathy mountain. The latter are low, small, and meagre, incapable of going so swift as the former, although they are found to hold out much longer. They are also more artful in evading the hunters; their horns are generally black and short, while those of the lowland stags are reddish and flourishing; so that the animal seems to increase in beauty and stature in proportion to the goodness of the pasture, which he enjoys in security.

Of all the animals that are natives of this climate, there are none that have such a beautiful eye as the stag; it is sparkling, soft, and sensible. His senses of smelling and hearing are in no less perfection. When he is in the least alarmed, he lifts the head and erects the ears, standing for a few minutes as if in a listening posture. Whenever he ventures upon some unknown ground, or quits his native covering, he first stops at the skirt of the plain to examine all around; he next turns against the wind to examine by the smell, if there be any enemy approaching. If a person should happen to whistle or call out, at a distance, the stag is seen to stop short in his slow measured pace, and gazes upon the stranger with a kind of aukward admiration; if the cunning animal perceives neither dogs nor fire-arms preparing against him, he goes forward, quite unconcerned, and slowly proceeds without offering to fly. Man is not the enemy he is most afraid of; on the contrary, he seems to be delighted with the sound of the shepherd's pipe; and the hunters sometimes make use of that instrument to allure the poor animal to his destruction.

The stag eats slowly, and is very delicate in the

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choice of his pasture. When he has eaten a sufficiency, he then retires to the covert of some thicket to chew the cud in security. His rumination, however, seems performed with much greater difficulty than with the cow or sheep; for the grass is not returned from the first stomach without much straining, and a kind of hiccup, which is easily perceived during the whole time it continues. This may proceed from the greater length of his neck and the narrowness of the passage. all those of the cow and the sheep kind having it much wider.

This animal's voice is much stronger, louder, and more tremulous in proportion as he advances in age; in the time of rut it is even terrible. At that season he seems so transported with passion, that nothing obstructs his fury; and, when at bay, he keeps the dogs off with great intrepidity. Some years ago, William Duke of Cumberland caused a tiger and a stag to be inclosed in the same area; and the stag made so bold a defence, that the tiger was at last obliged to fly. The stag seldom drinks in the winter, and still less in the spring, while the plants are tender and covered with dew. It is in the heat of summer, and during the time of rut, that he is seen constantly frequenting the side of rivers and lakes, as well to slake his thirst, as to cool his ardour. He swims with great ease and strength, and best at those times when he is fattest, his fat keeping him buoyant, like oil upon the surface of the water. During the time of rut he even ventures out to sea, and swims from one island to another, although there may be some leagues distance between them.

The cry of the hind, or female, is not so loud as that of the male, and is never excited but by apprehension for herself or her young. It needs scarce be mentioned that she has no horns, or that

she is more feeble and unfit for hunting than the male. When once they have conceived, they separate from the males, and then they both herd apart. The time of gestation continues between eight and nine months, and they generally produce but one at a time. Their usual season for bringing forth, is about the month of May, or the beginning of June, during which they take great care to hide their young in the most obscure thickets. Nor is this precaution without reason, since almost every creature is then a formidable enemy. The eagle, the falcon, the osprey, the wolf, the dog, and all the rapacious family of the cat kind, are in continual employment to find out her retreat. But, what is more unnatural still, the stag himself is a professed enemy, and she is obliged to use all her arts to conceal her young from him, as from the most dangerous of her pursuers. At this season, therefore, the courage of the male seems transferred to the female; she defends her young against her less formidable opponents by force; and when pursued by the hunter, she even offers herself to mislead him from the principal objects of her concern. She flies before the hounds for half the day, and then returns to her young, whose life she has thus preserved at the hazard of her own. The calf, for so the young of this animal is called, never quits the dam during the whole summer; and in winter, the hind, and all the males under a year old, keep together, and assemble in herds, which are more numerous in proportion as the season is more severe. In the spring they separate; the hinds to bring forth, while none but the year olds remain together; these animals are, however, in general, fond of herding and grazing in company; it is danger or necessity alone that separates them.

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mals, are nothing when compared to those from man. The men of every age and nation have made the chase of the stag one of their most favourite pursuits ; and those who first hunted from necessity, have continued it for amusement. In our own country, in particular, hunting was ever esteemed as one of the principal diversions of the great. At first, indeed, the beasts of chase had the whole island for their range, and knew no other limits than those of the ocean.

In the present cultivated state of this country, the stag is unknown in its wild natural state ; and such of them as remain among us are kept, under the name of red deer, in parks among the fallow deer. But they are become less common than formerly ; its excessive viciousness, during the rutting season, and the badness of its flesh, inducing most people to part with the species. The few that still remain wild, are to be found on the moors that border on Cornwall and Devonshire ; and in Ireland, on most of the large mountains of that country.

In England, the hunting the stag and the buck are performed in the same manner ; the animal is driven from some gentleman's park, and then hunted through the open country. But those who pursue the wild animal, have a much higher object, as well as a greater variety in the chase. To let loose a creature that was already in our possession, in order to catch it again, is but a poor pursuit, as the reward, when obtained, is only what we before had given away. But to pursue an animal that owns no proprietor, and which he that first seizes may be said to possess, has something in it that seems at least more rational ; this rewards the hunter for his toil, and seems to repay his industry. Besides, the superior strength and swiftness of the wild animal prolongs the amusement ; it is possess-

ed of more various arts to escape the hunter, and leads him to precipices where the danger ennobles the chase. In pursuing the animal let loose from a park, as it is unused to danger, it is but little versed in the stratagems of escape; the hunter follows as sure of overcoming, and feels none of those alternations of hope and fear which arise from the uncertainty of success. But it is otherwise with the mountain stag: having spent his whole life in a state of continual apprehension; having frequently been followed, and as frequently escaped, he knows every trick to mislead, to confound, or intimidate his pursuers; to stimulate their ardour, and enhance their success.

Those who hunt this animal have their peculiar terms for the different objects of their pursuit. The professors in every art take a pleasure in thus employing a language known only to themselves, and thus accumulate words, which to the ignorant have the appearance of knowledge. In this manner, the stag is called the first year, a calf, or hind calf; the second year, a knobber; the third, a brock; the fourth, a stag-guard; the fifth, a stag; the sixth, a hart. The female is called a hind; the first year she is a calf; the second a hearse; the third, a hind. This animal is said to harbour in the place where he resides.

Such are but a few of the many terms used by hunters in pursuing of the stag, most of which are now laid aside, or in use only among gamekeepers. The chase, however, is continued in many parts of the country where the red deer is preserved, and still makes the amusement of such as have not found out more liberal entertainments. In those few places where the animal is perfectly wild, the amusement, as was said above, is superior. The first great care of the hunter, when he leads out his hounds to the mountain side, where the deer are

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generally known to harbour, is to make choice of a proper stag to pursue. His ambition is to unharbour the largest and the boldest of the whole herd; and for this purpose he examines the track, if there be any, which if he finds long and large, he concludes that it must have belonged to a stag, and not a hind, the print of whose foot is rounder. Those marks also which he leaves on trees, by the rubbing of his horns, show his size, and point him out as the proper object of pursuit. Now to seek out a stag in his haunt, it is to be observed, that he changes his manner of feeding every month. From the conclusion of rutting time, which is November, he feeds in heaths and broomy places. In December they herd together, and withdraw into the strength of the forests, to shelter themselves from the severe weather, feeding on holm, elder trees, and brambles. The three following months they leave herding, but keep four or five in a company, and venture out to the corners of the forest, where they feed on winter pasture, sometimes making their incursions into the neighbouring corn-fields, to feed upon the tender shoots, just as they peep above ground. In April and May they rest in thickets and shady places, and seldom venture forth, unless roused by approaching danger. In September and October their annual ardour returns; and then they leave the thickets, boldly facing every danger, without any certain place for food or harbour. When, by a knowledge of these circumstances, the hunter has found out the residence, and the quality of his game, his next care is to uncouple and cast off his hounds in the pursuit: these no sooner perceive the timorous animal that flies before them, but they altogether open in full cry, pursuing rather by the scent than the view, encouraging each other to continue the chase, and tracing the flying animal with the most amazing sagacity. The hunters also

are not less ardent in their speed on horseback, cheering up the dogs, and directing them where to pursue. On the other hand, the stag, when unharboured, flies at first with the swiftness of the wind, leaving his pursuers several miles in the rear; and at length having gained his former converts, and no longer hearing the cries of the dogs and men that he had just left behind, he stops, gazes round him, and seems to recover his natural tranquillity. But this calm is of short duration, for his inveterate pursuers slowly and securely trace him along, and he once more hears the approaching destruction from behind. He again, therefore, renews his efforts to escape, and again leaves his pursuers at almost the former distance; but this second effort makes him more feeble than before, and when they come up a second time, he is unable to outstrip them with equal velocity. The poor animal now, therefore, is obliged to have recourse to all his little arts of escape, which sometimes, though but seldom, avail him. In proportion as his strength fails him, the ardour of his pursuers is inflamed; he tracks more heavily on the ground, and this increasing the strength of the scent, redoubles the cries of the hounds, and enforces their speed. It is then that the stag seeks for refuge among the herd, and tries every artifice to put off some other head for his own. Sometimes he will send forth some little deer in his stead, in the mean time lying close himself, that the hounds may overshoot him. He will break into one thicket after another, to find deer, rousing them, gathering them together, and endeavouring to put them upon the tracks he has made. His old companions, however, with a true spirit of ingratitude, now all forsake and shun him with the most watchful industry, leaving the unhappy creature to take his fate by himself. Thus aban-

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doned of his fellows, he again tries other arts, by doubling and crossing in some hard beaten highway, where the scent is least perceivable. He now also runs against the wind, not only to cool himself, but the better to hear the voice, and judge of the distance of his implacable pursuers. It is now easily perceivable how sorely he is pressed, by his manner of running, which, from the bounding, easy pace with which he began, is converted into a stiff and short manner of going; his mouth also is black and dry, without foam on it; his tongue hangs out; and the tears, as some say, are seen starting from his eyes. His last refuge, when every other method of safety has failed him, is to take the water, and to attempt an escape by crossing whatever lake or river he happens to approach. While swimming, he takes all possible care to keep in the middle of the stream, lest by touching the bough of a tree, or the herbage on the banks, he may give scent to the hounds. He is also ever found to swim against the stream; whence the huntsmen have made into a kind of proverb, *That he that would his chase find, must up with the river and down with the wind.* On this occasion too he will often cover himself under water, so as to show nothing but the tip of his nose. Every resource, and every art being at length exhausted, the poor creature tries the last remains of his strength, by boldly opposing those enemies he cannot escape; he therefore faces the dogs and men, threatens with his horns, guards himself on every side, and for some time stands at bay. In this manner, quite desperate, he furiously aims at the first dog or man that approaches; and it often happens that he does not die unrevenged. At that time the more prudent, both of the dogs and men, seem willing to avoid him; but the whole

pack quickly coming up, he is soon surrounded and brought down, and the huntsman winds a treble mort, as it is called, with his horn.

This species were once numerous through Britain. The Saxon monarchs of England formed some uncultivated tracts into forests for deer. The princes of the Norman line, animated with the most extravagant passion for the chace, and careless of the welfare of their subjects, depopulated their kingdom, razing villages, and levelling churches and other religious houses, to form forests for the maintenance of these and other wild beasts. But in the progress of liberty and civilization, the number and extent of those forests were greatly reduced. Our monarchs learned to consult the happiness of their subjects, and the population of their dominions, in preference to their own diversions. And though there are still several royal forests in England, these are not many, nor are they guarded by the same sanguinary laws as formerly.

Besides being a tyrannical encroachment on the liberties of the subject, and a savage depopulation of the kingdom, the existence of so many forests, and the forest-laws, were calculated to produce the most unfavourable effects on the morals of the lower classes of the people. Deer stealing was a crime of which, when they could escape detection, the youth made very light. But the parties who engaged in such an enterprise were generally lost to sobriety and industry, and had their morals completely corrupted. We indeed owe the dramatic productions of our admired Shakespeare to the prosecution for deer stealing, which drove him from his original occupation. But the same circumstances which excited a Shakespeare to the exertion of powers of genius, that might other-

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wise have lain dormant, would undoubtedly conduct many others to extremities of guilt and misery.

The deer stealers practised some singular arts, and had often dangerous and surprising adventures in pursuing their forbidden sports. They would sometimes watch the pregnant hind to her lair, and when the calf was dropped, pare its feet to the quick, to prevent its escape till it became large and fat enough to be killed. Sometimes, a brother deer stealer was by moon shine mistaken for a deer, and shot at with a bullet. Some of those fellows once advancing with a dog to a place in Wolmer forest, where they suspected a calf to have been deposited, the parent hind rushed out from the brake, and making a vast spring with all her feet close together, pitched upon the neck of the dog, who fell dead to the ground.

In the Highlands of Scotland, there are still some red deer. Before the hereditary jurisdiction of the Highland chieftains was abolished, and means employed to weaken the attachment by which their vassals were so absolutely devoted to their will, thousands used to be occasionally assembled to hunt the deer over the wild hills of the north; the head of a clan went out to pursue his sports with a parade of attendants, as if he had been a mighty monarch. So late as in the beginning of the last century, there were red deer scattered over the hills of Galloway. But by the eagerness with which the peasants pursued them, they have been long since exterminated from that district.

These animals afford various articles of utility to human life. The firm and solid texture of the horns, fits them for handles to knives and other domestic utensils. The skin is dressed into excellent leather. The flesh, though when taken in

the rutting season, of a disagreeable taste and smell, affords, at other times, wholesome and pleasant food. The tallow is made into very good candles. Spirit of hartshorn is a well known stimulant.

When a herd of stags have to pass a pretty wide river, which they are able to do without much difficulty, they are said to rest their heads on each other's rumps. When the leader is fatigued, he retreats to the rear, and suffers the next in succession to take his place.

The natives of Louisiana hunt these animals both for food, and as an amusement. This is sometimes done in companies, and sometimes alone. The hunter, who goes out alone, furnishes himself with the dried head of a stag, having part of the skin of the neck attached to it. This, a gun, and a branch of a tree, or piece of a bush, are all that he has need of. When he comes near any of the wild deer, hiding himself behind the bush, which he carries in his hand, he approaches very gently till he is within shot. If the animal appears alarmed, the hunter immediately counterfeits the deers' call to each other, and holds the head just above the bush; then lowering it towards the ground, and lifting it by turns, he so deceives the stag with the appearance of a companion, that he seldom fails to come towards it, in which case the hunter fires into the hollow of his shoulder, and lays him dead on the spot.

When the hunters go in large parties, they form a wide crescent round one of these animals, the points of which may be half a mile asunder. Some of them approach towards the stag, which runs, affrighted, to the other side, when finding them on that part advancing, he immediately rushes back again. Thus he is driven from side to side, the crescent closing into a circle, and gradually ap-

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proaching, till at length he is so much exhausted as no longer to be able to stand against them, but quietly submits to be taken alive. It sometimes happens, however, that he has sufficient strength left to stand at bay, in which case he is seized from behind, but seldom in this case before some one is wounded. This mode of hunting is merely adopted as a recreation, and is called "the dance of the deer."

Much has frequently been said of the extreme long life of the stag, and many wonderful stories have been related by naturalists respecting it; but there is great reason for supposing that this animal does not often reach the age of fifty years.

FALLOW DEER.

THE fallow deer is smaller than the stag, of a brownish bay colour, whitish beneath, on the insides of the limbs, and beneath the tail. The horns, which are peculiar to the male, are very different from those of the stag; they are not branched, but are broader towards the upper part, and divided into processes down the outside. A simple antler rises from the base of each, and a similar one at some distance from the first. In its general form the fallow deer greatly resembles the stag; and yet no two animals keep more distinct, or avoid each other with more fixed animosity. They are never seen to herd in the same place, they never engender together, or form a mixed breed; and even in those countries where the stag is common, the buck seems to be entirely a stranger; in short, they both form distinct families; which, though so seemingly near, are still remote; and although with the same habitudes, yet retain an unalterable aversion. The fallow deer, as they are much smaller, so they seem of a nature less

robust, and less savage than those of the stag kind. They are found but rarely wild in the forests; they are, in general, bred up in parks, and kept for the purposes of hunting, or of luxury, their flesh being preferred to that of any other animal.

The horns of the buck, as of all other animals of his kind, are shed every year, and take the usual time for repairing. The only difference between it and the stag is, that this change happens later in the buck; and its rutting time consequently falls more into the winter. It is not found so furious at this season as the former; nor does it so much exhaust itself by the violence of its ardour. It does not quit its natural pastures in quest of the female; nor does it attack other animals with indiscriminate ferocity; however, the males combat for the female among each other; and it is not without many contests, that one buck is seen to become master of the whole herd. It often happens, also, that an herd of fallow deer is seen to divide into two parties, and engage each other with great ardour and obstinacy. They both seem desirous of gaining some favourite spot of the park for pasture, and of driving the vanquished party into the coarser and more disagreeable parts. Each party has its leader, which is always the oldest and strongest of the flock. They attack in regular order of battle; they fight with courage, and mutually support each other; they retire, they rally, and seldom give up after one defeat. The combat is frequently renewed for many days together; till, after several defeats, the weaker party is obliged to give way, and leave the conquerors in possession of the object of their contention.

The fallow deer is easily tamed, and feeds upon many things which the stag refuses. By this means it preserves its venison better; and even after

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rutting, it does not appear entirely exhausted. It continues almost in the same state through the whole year, although there are particular seasons when its flesh is chiefly in esteem. This animal also browses closer than the stag; for which reason it is more prejudicial among young trees, which it often strips too close for recovery. The young deer eat much faster and more greedily than the old; they seek the female at their second year; and, like the stag, are fond of variety. The doe goes with young above eight months, like the hind; and commonly brings forth one at a time; but they differ in this, that the buck comes to perfection at three, and lives till sixteen; whereas the stag does not come to perfection till seven, and lives till forty.

As this animal is a beast of chase, like the stag, so the hunters have invented a number of names relative to him. The buck is the first year called a fawn; the second, a pricket; the third, a sorel; the fourth, a sore; the fifth, a buck of the first head; and the sixth, a great buck; the female is called a doe; the first year a fawn; and the second a tegg. The manner of hunting the buck is pretty much the same as that of stag-hunting, except that less skill is required of the latter. The buck is more easily roused; it is sufficient to judge by the view, and mark what grove or covert it enters, as it is not known to wander far from thence; nor, like the stag, to change its layer, or place of repose. When hard hunted it takes to some strong held, or covert, with which it is acquainted, in the more gloomy parts of the wood, or the steep slopes of the mountain; not like the stag, flying before the hounds, nor crossing nor doubling, nor using any of the subtleties which the stag is accustomed to. It will take the water when sorely pressed, but seldom a great river; nor can it swim so long,

nor so swiftly, as the former. In general, the strength, the cunning, and courage of this animal, are inferior to those of the stag; and, consequently, it affords neither so long, so various, nor so obstinate a chase; besides, being lighter, and not tracing so deeply, it leaves a less powerful and lasting scent, and the dogs in the pursuit are more frequently at a fault.

Fallow deer inhabit through almost all Europe. In France and Germany, they are not numerous. Wild fallow deer are found in the forests of Lithuania and Moldavia, in Greece, and the north of China. They were not originally natives of America. In Spain, they grow remarkably large. They are more numerous in Britain than in any other part of Europe. In Russia, they are entirely unknown; in Sweden, preserved in parks. One of the breeds which have been propagated in Britain was originally introduced from Norway by king James I. when he went to bring home his Danish bride.

The flesh of the fallow deer is perhaps the most agreeable species of animal food. Both men and dogs prefer it greatly to that of the stag. The skin of the buck and the doe is dressed into the best leather for breeches, gloves, &c. The horns of this, as well as those of the species last described, being compact, solid, and weighty, are wrought into excellent handles for knives and other utensils. Spirit of hartshorn is extracted from them; and after losing that spirit, they are reduced by calcination, to what is called burnt hartshorn, which constitutes a valuable material in fluxes for promoting the fusion of metals.

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ROE BUCK.

THE roe buck is the smallest of the deer kind known in our climate, and is now almost extinct among us, except in some parts of the Highlands of Scotland. It is generally about three feet long, and about two feet high. The horns are from eight to nine inches long; upright, round, and divided into only three branches. The body is covered with very long hair, well adapted to the rigour of its mountainous abode. The lower part of each hair is ash colour; near the ends is a narrow bar of black, and the points are yellow. The hairs on the face are black, tipped with ash colour. The ears are long, their insides of a pale yellow, and covered with long hair. The spaces bordering on the eyes and mouth are black. The chest, belly, and legs, and the inside of the thighs, are of a yellowish white; the rump is of a pure white, and the tail very short. The make of this little animal is very elegant; and its swiftness equals its beauty. It differs from the fallow deer, in having round horns, and not flatted like theirs. It differs from the stag, in its smaller size and the proportionable paucity of its antlers; and it differs from all of the goat kind as it annually sheds its horns and obtains new ones, which none of that kind are ever seen to do.

As the stag frequents the thickest forests, and the sides of the highest mountains, the roe buck, with humbler ambition, courts the shady thicket, and the rising slope. Although less in size, and far inferior in strength, to the stag, it is yet more beautiful, more active, and even more courageous. Its hair is always smooth, clean, and glossy; and it frequents only the driest places, and of the purest air. Though but a very little animal, as

we have already observed, yet, when its young is attacked, it faces even the stag himself, and often comes off victorious. All its motions are elegant and easy; it bounds without effort, and continues the course with but little fatigue. It is also possessed of more cunning in avoiding the hunter, is more difficult to pursue, and, although its scent is much stronger than that of the stag, it is more frequently found to make a good retreat. It is not with the roe buck, as with the stag, who never offers to use art until his strength is beginning to decline; this more cunning animal, when it finds that its first efforts to escape are without success, returns upon its former track, again goes forward, and again returns, until by its various windings it has entirely confounded the scent, and joined the last emanations to those of its former course. It then, by a bound, goes to one side, lies flat upon its belly, and permits the pack to pass by very near, without offering to stir.

But the roe buck differs not only from the stag in superior cunning, but also in its natural appetites, its inclinations, and its whole habits of living. Instead of herding together, these animals live in separate families; the sire, the dam, and the young ones, associate together, and never admit a stranger into their little community. All others of the deer kind are inconstant in their affection; but the roe buck never leaves its mate; and, as they have been generally bred up together from their first fawning, they conceive so strong an attachment, that they never after separate. Their rutting season continues but fifteen days, from the latter end of October to about the middle of November. They are not at that time, like the stag, overloaded with fat; they have not that strong odour, which is perceived in all others of the deer kind; they have none of those furious excesses;

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nothing, in short, that alters their state ; they only drive away their fawns upon these occasions ; the buck forcing them to retire, in order to make room for a succeeding progeny ; however, when the season is over, the fawns return to their does, and remain with them some time longer ; after which, they quit them entirely, in order to begin an independent family of their own. The female goes with young but five months and a half ; which alone serves to distinguish this animal from all others of the deer kind, that continue pregnant more than eight. In this respect, she rather approaches more nearly to the goat kind.

When the female is ready to bring forth, she seeks a retreat in the thickest part of the woods, being not less apprehensive of the buck, from whom she then separates, than of the wolf, the wild cat, and almost every ravenous animal of the forest ; she generally produces two at a time, and three but very rarely. In about ten or twelve days these are able to follow their dam, except in cases of warm pursuit, when their strength is not equal to the fatigue. Upon such occasions the tenderness of the dam is very extraordinary ; leaving them in the deepest thickets, she offers herself to the danger, flies before the hounds, and does all in her power to lead them from the retreat where she has lodged her little ones. Such animals as are nearly upon her own level, she boldly encounters ; attacks the stag, the wild cat, and even the wolf ; and while she has life, continues her efforts to protect her young. Yet all her endeavours are often vain ; about the month of May, which is her fawning time, there is a greater destruction among those animals than at any other season of the year. Numbers of the fawns are taken alive by the peasants ; numbers are found out, and worried by the dogs ; and still more by

the wolf, which has always been their most inveterate enemy. By these continual depredations upon this beautiful creature, the roe buck is every day becoming scarcer, and the whole race in many countries is wholly worn out. They were once common in England; the huntsmen, who characterized only such beasts as they knew, have given names to the different kinds and ages as to the stag; thus they called it the first year a hind; the second a gyrl; and the third a hemuse: but these names at present are utterly useless, since the animal no longer exists among us. Even in France, where it was once extremely common, it is now confined to a few provinces; and it is probable that in an age or two the whole breed will be totally extirpated. M. Buffon, indeed, observes that in those districts where it is mostly found, it seems to maintain its usual plenty, and that the balance between its destruction and increase is held pretty even; however, the number in general is known to decrease; for wherever cultivation takes place the beasts of nature are known to retire.

Many animals that once flourished in the world may now be extinct; and the descriptions of Aristotle and Pliny, though taken from life, may be considered as fabulous, as their archetypes are no longer existing.

The fawns continue to follow the deer eight or nine months in all; and, upon separating, their horns begin to appear, simple and without antlers the first year, as in those of the stag kind. These they shed at the latter end of autumn, and renew during the winter; differing in this from the stag, who sheds them in spring, and renews them in summer. When the roe buck's head is completely furnished, it rubs the horns against trees in the manner of the stag, and thus strips them of the rough skin and the blood-vessels, which no lon-

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ger contribute to their nourishment and growth. When these fall, and new ones begin to appear, the roe buck does not retire as the stag to the covert of the wood, but continues its usual haunts, only keeping down its head to avoid striking its horns against the branches of trees, the pain of which it seems to feel with exquisite sensibility. The stag, who sheds his horns in summer, is obliged to seek a retreat from the flies, that at that time greatly incommode him; but the roe buck, who sheds them in winter, is under no such necessity; and, consequently, does not separate from its little family, but keeps with the female all the year round.

As the growth of the roe buck, and its arrival at maturity, is much speedier than that of the stag, so its life is proportionably shorter. It seldom is found to extend above twelve or fifteen years; and, if kept tame, it does not live above six or seven. It is an animal of a very delicate constitution, requiring variety of food, air, and exercise. It must be paired with a female, and kept in a park of at least a hundred acres. They may easily be subdued, but never thoroughly tamed. No arts can teach them to be familiar with the feeder, much less attached to him. They still preserve a part of their natural wildness, and are subject to terrors without a cause. They sometimes, in attempting to escape, strike themselves with such force against the walls of their inclosure, that they break their limbs, and become utterly disabled. Whatever care is taken to tame them, they are never entirely to be relied on, as they have capricious fits of fierceness, and sometimes strike at those they dislike with a degree of force that is very dangerous.

The cry of the roe buck is neither so loud nor so frequent as that of the stag. The young ones

have a particular manner of calling to the dam, which the hunters easily imitate, and often thus allure the female to her destruction. Upon some occasions also they become in a manner intoxicated with their food, which during the spring, is said to ferment in their stomachs, and they are then very easily taken. In summer they keep close under covert of the forest, and seldom venture out, except in violent heats, to drink at some river or fountain. In general, however, they are contented to slake their thirst with the dew that falls on the grass and the leaves of trees, and seldom risk their safety to satisfy their appetite. They delight chiefly in hilly grounds, preferring the tender branches and buds of trees, to corn or other vegetables : and it is universally allowed that the flesh of those between one and two years old is the greatest delicacy that is known. Perhaps, also, the scarceness of it enhances its flavour.

TAIL-LESS ROE.

THIS animal inhabits all the temperate regions of Russia and Siberia. It is larger than our common roe buck. But its chief distinction is the want of a tail. It is covered with a long thick coat, of a clay colour on the under part of the body ; white on the buttocks ; and on the other parts, coloured like our roe. Its horns are divided like those of our roe, into three branches, and are tuberculated at the base.

In summer these tail-less roes inhabit the lofty mountains of Hyrcania, Siberia, and that part of Russia which lies north-east of the river Wolga. In winter they descend from the mountains into the adjacent plains.

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Axis.

THE axis is a very beautiful animal, nearly of the size of the fallow-deer; its horns dividing into three branches, all pointing upwards, and its tail being of the same length as that of the fallow-deer.

But of this species there are several varieties, differing in size and colours.

The spotted axis is of a light reddish brown colour, has its body beautifully variegated with white spots, and is marked on the lower part of its sides, next the belly, with a line of white, the under parts are of a pale colour. The tail is reddish above, and white beneath.

Pliny mentions this as an animal of India sacred to Bacchus, characterizing it by the resemblance which it bears of a fawn; and its being sprinkled over with white spots. The same species still abounds in India. On the banks of the Ganges, and in the island of Ceylon, they are very common. From India they have been introduced into Europe. Nor is the temperature of our European climates at all unfavourable to them. In the king of France's parks, they have multiplied into flocks. In the duke of Richmond's parks in England, they are said to have propagated with the fallow deer. They have also bred in the prince of Orange's parks near the Hague. In their manners they are mild and peaceable, and refuse not the familiarity of mankind. Their powers of smelling are so exquisite, that though they readily eat bread from the hand, they refuse a piece which has been breathed on.

Nearly of the same figure, but larger, and never spotted, but sometimes varying in colour from light red to white, (in which latter state it is considered

as a great curiosity,) is the middle-sized axis of Pennant, an inhabitant of the dry hilly forests of Borneo, Java, Celebes, Ceylon, and probably Sumatra. Hundreds are often associated in one herd. They grow very fat, and are often pursued in Java and Celebes, by numerous hunting parties, who kill multitudes in one expedition. Their flesh, either salted or fresh, is excellent food. The tongue is a delicacy. The hides are articles of traffic.

A pair of horns, similar in shape to those of the above varieties of the axis, but considerably larger and stronger, not less than two feet nine inches long, and two feet four inches from tip to tip, are to be seen in the British Museum. They are conjectured to belong to a still larger variety of this same species; a variety, which, as Mr. Pennant was informed by Mr. Loten, are of a reddish colour, as tall as a horse, and inhabit the low, marshy grounds in the islands of Ceylon and Borneo.

VIRGINIAN DEER.

THE Virginian deer are a distinct species, common to all the provinces of North America, south of Canada, but more numerous in the more southern.

The horns are slender, with numerous branches on the interior sides, and much bent forwards, but without brow antlers. They are nearly of the same size as the English fallow-deer, only sometimes rather larger. Their general colour is a light cinereous brown, the head of a deeper cast, and the belly, sides, shoulders, and thighs, brown mottled with white; the length of the tail ten inches.

They are numerous on the extensive plains lying along the Mississippi and the rivers that run into it. They are very probably likewise natives of Guiana. Their rutting season is in September.

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From September till March, the bucks and does herd together. The does then retire to bring forth, and live apart till, with the return of autumn, both they and the bucks again feel the influence of passion. They are wandering restless animals. Near the shores, they are infested by insects, which deposit their eggs on the head and throat of the deer; and worms are of consequence generated in these parts. From this and other causes, they are, in such pastures, always lean, and in a bad condition. On the hills and inland plains, they are not exposed to the same annoyances, and accordingly thrive better. They are fond of salt, and resort eagerly to places impregnated with it. Their skins have been an important article of commerce to the states, particularly of New York and Pennsylvania, from which places more than twenty-five thousand skins were imported in 1764.

They are objects of great consequence to the savages. War and the chase are the two great employments which occupy those simple people. The chase not only affords the means of subsistence, but prepares the hunter for enduring the fatigues, and practising the arts and stratagems of war. Vast numbers of those deer are annually destroyed by the Indian hunters; who either surround them, fire the woods in which they are sheltered, and, driving them into some peninsula or narrow defile, slaughter crowds at once, without difficulty; or, with greater artifice, disguise themselves in the skins of deer formerly killed, having the heads and horns still appended to them, and thus deceiving the unwary animals to approach familiarly, slay them before they suspect their danger.

MEXICAN DEER.

THIS animal, in colour, figure, and size, resembling our European roe, furnished with horns of a different form, is confined, perhaps, to the southern regions of the new world ; to Mexico, Guiana, and Brasil. Its head is large ; its neck thick ; its eyes large and bright. The skin of the young is often marked with white rays. Its horns are strong, thick, rugged, and bent forwards ; trifurcated at the upper part, and furnished besides with a sharp erect snag, separating from the trunk of the horn, about an inch and an half above the root. It does not live always retired in the interior parts of the country ; but ventures out, at times, upon the borders of the plantations. Its flesh is not equal to that of our European roe.

The Indian roe, whose horns are in the British Museum, is considered by Shaw as a variety of this species. They are about sixteen inches long, very strong, and ragged, their ends bend forward, and are divided into two branches, with many processes.

PORCINE DEER.

THE porcine deer is an oriental animal, about three feet six inches long, and nearly two feet and a half in height. The figure of its body is thick and clumsy, like that of a hog. Its legs are slender and elegant. Its horns are thirteen inches long ; its tail eight ; its head ten and a half. The upper part of the neck, body, and sides, is brown ; the body and sides are lighter coloured.

They are natives of Borneo ; and the late lord Clive brought one to England from Bengal. They

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are entrapped in pit-falls dug in the ground, and covered over with slight materials, on which they heedlessly trust themselves. Their feet are used for tobacco stoppers. There is a spotted variety of this species.

RIB-FACED DEER.

THIS deer is peculiarly characterized by three longitudinal ribs extending between the horns and the eyes. Its horns are supported on a bony process, covered with hair, and rising three inches above the skull. They are trifurcated, and have the upper fork hooked. The upper jaw is on each side armed with a tusk.

It is shaped like the porcine deer, but inferior in size to the British roe buck. Like the roe, this species associates only in families. They are inhabitants of Java and Ceylon.

GREY OR GUINEA DEER.

THIS deer is of the size of a cat; with long ears; grey on the upper part of its body, but black below; and marked between the eyes with a black line.

This is an obscure species. The only description of it was furnished by Linnæus; and, as the horns were wanting in the specimen which he examined, he could not determine certainly whether it were a deer, a musk, or a female antelope.

GIRAFFE TRIBE.

In this tribe, of which but a single species has been hitherto discovered, the horns are simple, covered with skin, blunt at the ends, and each terminated by a tuft of black hair. In the lower jaw there are eight broad and thin front teeth, the outermost of which on each side are deeply divided into two lobes.

This animal, although nearly allied both to the deer and antelope tribes, is so remarkable in its structure, as, in an artificial system at least, to require a distinct classification.

GIRAFFE.

THIS extremely singular quadruped is never met with in a wild state but in the interior parts of Africa, and even there it has been but seldom seen by European travellers. Its head bears a considerable resemblance to that of the horse, but is furnished with erect horns, covered with a hairy skin, about six inches long; these are blunt, as though cut off at the ends, and each tufted with a brush of coarse black hairs. The neck is very long, thin, and erect, and has on the ridge a short erect mane, which extends along the back nearly to the origin of the tail. The shoulders are very deep, which has given rise to the vulgar error that the fore legs are longer than the hinder ones, a circumstance that proves on examination to be by no means true. When they stand with their head and neck perfectly erect, many of the giraffes measure sixteen or eighteen feet, from the hoof to the end of the horns. In their native wilds their





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singular form gives them, at a distance, the appearance of decayed trees ; and this is not a little aided by their colour, which is a reddish white, marked with numerous large rusty spots.

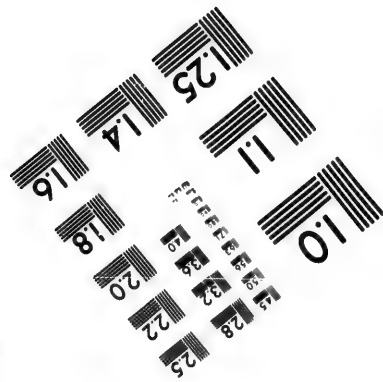
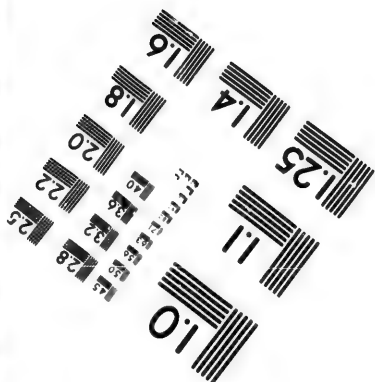
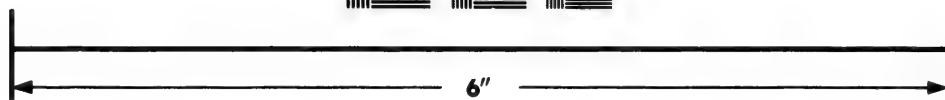
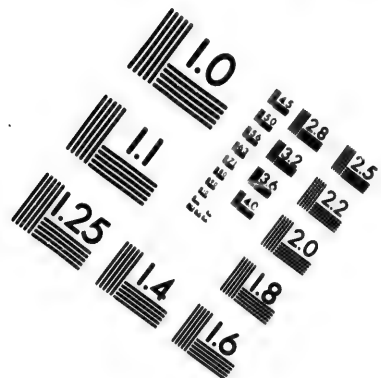
They are of a mild and timid disposition. When pursued, they trot so fast, that even a good horse is scarcely able to keep pace with them, and they continue their course for a long time without requiring rest. When they leap, they raise the fore legs, and then the hinder ones, in the manner of a horse whose fore legs are tied together. Their general position, except when grazing, is with the head and neck erect. They feed principally on the leaves of trees, and particularly on those of a peculiar species of mimosa, common in the country where they are found, to which the extreme length of their legs and neck admirably adapt them. When they feed from the ground, they are under the necessity of dividing their fore legs to a considerable distance. In preparing to lie down, they kneel like the camel.

It has been generally supposed that the giraffe possessed neither the power nor the strength to defend itself against the attacks of other animals ; this, however, seems to be unfounded ; for M. le Vaillant has asserted, that by its kicks, it frequently wearies, discourages, and distances, even the lion. The utility of the horns appears to be hitherto unknown ; this writer says, that they are not used as weapons of defence.

The giraffe is never seen near the coasts of Africa, confining itself entirely to the interior recesses of the forests, whence it is never taken alive except when young. From divers accounts that have been left to us, it seems to have been known to the ancients. Heliodorus, the Greek bishop of Sicca, mentions it particularly in his time, and his des-

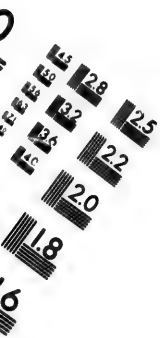


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cription seems more original and authentic than those of most of the old writers.

“The ambassadors from the Axiomitæ,” he says, “brought presents to Hydaspes, and, among other things, there was an animal of strange and wonderful species, about the size of a camel, and marked upon the skin with florid spots. The hinder parts, from the loins, were low, like those of a lion; but the shoulders, fore feet, and breast, were elevated above proportion to the other parts. The neck was small, and lengthened out from its large body like that of a swan. The head, in form, resembled a camel, but was in size about twice that of the lybian struthium, (ostrich) and it rolled the eyes, which had a film over them, very frightfully.---It differs in its gait from every other land or water animal, waddling in a remarkable manner. Each leg does not move alternately, but those on the right side move together, independently of the other, and those of the left in the same manner, so that each side is alternately elevated. It is so tractable as to be led by a small string fastened to the head, by which the keeper conducts it as he pleases, as if with the strongest chain. When this animal appeared, it struck the whole multitude with terror; and took its name from the principal parts of its body; being called by the people extempore camelopardalis.”

The flesh of the young giraffe is said to be good eating. The Hottentots hunt the animal principally on account of its marrow, which, as a delicacy, they set a high value upon

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ANTELOPE TRIBE.

THE antelopes are in general an elegant and active tribe of animals, inhabiting mountainous countries, where they bound among the rocks with so much lightness and elasticity, as to strike the spectator with astonishment. Some of them reside in the plains, where herds of two or three thousand are sometimes to be seen together. They browse like goats, and frequently feed on the tender shoots of trees. In disposition they are timid and restless, and nature has bestowed on them long and tendinous legs, peculiarly appropriated to their habits and manners of life. These, in some of the species, are so slender and brittle, as to snap with a very trifling blow ; the Arabs, taking advantage of this circumstance, catch them by throwing at them sticks, by which their legs are entangled and broken.

We shall complete the description of their character from Goldsmith, who calls them gazelles.

The gazelles, of which there are several kinds, can, with propriety, be referred neither to the goat nor the deer ; and yet they partake of both natures. Like the goat, they have hollow horns that never fall, which is otherwise in the deer. They have a gall-bladder, which is found in the goat, and not in the deer. On the other hand, they resemble the roe buck in size and delicacy of form ; they have deep pits under the eyes like that animal : they resemble the roe buck in the colour and nature of their hair ; they resemble him in the bunches upon their legs, which only differ in being upon the fore legs in these, and on the hind legs in the other. They seem, therefore, to be of

a middle nature, between these two kinds ; or, to speak with greater truth and precision, they form a distinct kind by themselves.

The distinguishing marks of this tribe of animals, by which they differ both from the goat and the deer, are these, their horns are made differently, being annulated or ringed round, at the same time that there are longitudinal depressions running from the bottom to the point. They have bunches of hair upon their fore legs ; they have a streak of black, red, or brown, running along the lower part of their sides, and three streaks of whitish hair in the internal side of the ear. These are characters that none of them are without ; besides these, there are others, which, in general, they are found to have, and which are more obvious to the beholder. Of all animals in the world, the gazelle has the most beautiful eye, extremely brilliant, and yet so meek, that all the eastern poets compare the eyes of their mistresses to those of this animal. A gazelle-eyed beauty is considered as the highest compliment that a lover can pay ; and, indeed, the Greeks themselves thought it no inelegant piece of flattery to resemble the eyes of a beautiful woman to those of a cow. The gazelle, for the most part, is more delicately and finely limbed than even the roe buck ; its hair is as short, but finer, and more glossy. Its hinder legs are longer than those before, as in the hare, which gives it greater security in ascending or descending steep places. Their swiftness is equal, if not superior, to that of the roe ; but as the latter bounds forward, so these run along in an even uninterrupted course. Most of them are brown upon the back white under the belly, with a black stripe separating those colours between. Their tail is of various lengths, but in all covered with pretty long hair ; and their ears are beautiful, well-placed,

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and terminating in a point.—They all have a cloven hoof: the female has smaller horns than the male.

BLUE ANTELOPE.

THIS animal is larger in size than any ordinary buck. Its horns are sharp-pointed, taper, arcuated, and reclining backwards; they are twenty inches in length, and marked with twenty prominent rings, but smooth towards the points. The hair of the body is long. The tail is seven inches in length: and the hairs at the end of it seven inches. The colour of the hair, when the animal is alive, is a beautiful glossy blue grey: when dead, it takes a grey colour. The belly is white; and under each eye, the face is marked with a large white spot.

This animal is a native of Africa, in the neighbourhood of the Cape; but seems to be confined within some districts at a considerable distance from that promontory.

EGYPTIAN ANTELOPE.

THE animals of this species are of the same size as our common domestic he-goat; but in figure, colour, and agility, chiefly resemble the stag. The length of a skin which Mr. Pennant examined, was better than six feet six inches, reckoning from its nose to the tip of the tail. The tail, which is covered with long black hairs, is, between the rump and the end of the hairs, two feet six inches long.

The belly, the rump, and the legs, are white; but each leg is marked below the knee with a dusky spot. The rest of the body is grey, or reddish; except that a black line runs along the back. The

horns are almost perfectly straight; three feet long; of a blackish colour; each about an inch and a half in diameter at the base, and distinguished on the lower half by twenty or more prominent wavy rings, the upper half smooth, and tapering into a sharp point. The distance between the points of the horns is fourteen inches. It has a remarkable triangular spot on the forehead, which terminates in a line running down its face, and dividing into two patches, one on each side of the nose.

This animal is found in the neighbourhood of the Cape. It is also an inhabitant of Syria, Arabia, Persia, India, Egypt, and Ethiopia. It is supposed to be the zebi of the holy Scriptures. Mr. Paterson informs us, from his own observation, that the horns of this antelope are remarkably long and sharp; and that, when attacked by dogs, it defends itself sitting on its hinder quarters. They do not associate in herds, but in small parties of two or three.

LEUCORYX.

THE leucoryx is of the same size with a small ox from Wales, or the Highlands of Scotland. Its body is thick and clumsy; its limbs rather more elegantly formed; its nose thick and broad, like a cow's; its ears somewhat slouching; its horns long, slender, slightly incurvated, annulated for a part of their length, black, and terminating with sharp points. Its tail reaches to the first joint, and ends with a tuft.

The body of this animal is almost all over of a milk-white colour; only the middle of the face, the sides of the cheeks, and the limbs, are tinged with red. Its face is marked like that of the Egyptian antelope.

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Bassorá, is the native region of the leucoryx. Mr. Pennant relates from a paper which he found in the British museum, that Shah Sultahn Houssein kept some of this species as curiosities, in a park, at the distance of eight leagues from his capital. A fossil horn from Siberia has been suspected, by Dr. Pallas, to have been produced on the head of a leucoryx.

ALGAZEL.

There appears to be a considerable resemblance, both in size and other particulars, between the algazel and leucoryx. But the horns of the algazel, though long, slender, and nearly upright, as well as the horns of the leucoryx, differ, however, from those of the latter animal, in being gently arched, not backwards, but towards each other. They are always annulated; but the inequalities produced by the rings on the surface of the horn are less remarkable in some than in others. The breast and the buttocks of this animal are white; the rest of its body is red.

India, Persia, Egypt, and Ethiopia, are the countries which produce the algazel. It is a gregarious animal. Along a plain it moves slowly; but climbs the sides of hills with great vigour and velocity. It is extremely shy and timid; yet, when taken alive, is easily tamed. Autumn is its season of love, and spring, of parturition. The oriental bezoar, a concretion once highly valued for its supposed medical qualities, strongly odorous, and highly aromatic, was formerly thought to be obtained only from this animal. The bezoar, however, is at present regarded as a concretion, not peculiar to any one animal, but formed within many other animals of the East, and even of Europe.

ELK ANTELOPE.

IN size and shape this animal bears some resemblance to the elk. The forehead of the elk antelope is flat, and broad above the eyes ; but from the eyes to the tip of the nose becomes gradually narrower, till it terminates in a sharp point. The breast is furnished with a dewlap, covered with long hair. On the upper part of the forehead stands a top of erect hairs. A thin erect mane runs along the back, from the nape of the neck to the origin of the tail. The ears are long and pointed. Though the body is of a thick robust form, the legs are slender and elegant. The height of the animal is commonly between five and six feet. The horns are generally about two feet long, of a dark brown colour, having each, from the base for one third of its length, three sides, and three ridges or ribs separating the sides, with a spiral wreath running over both the ridges and the sides ; from the termination of the ridges and the spiral wreath, the rest of the horn is round and smooth ; both horns rise almost in an upright direction ; only their tops are slightly bent forwards. The hoofs are short, and surrounded at their junction with the leg, with a circle of black hairs. The tail does not reach to the first joint of the leg, but is terminated with a tuft of long black hairs ; the short hair covering it is of an ash colour. The whole body, indeed, except the tuft at the end of the tail, the skin between the fetlocks and the hoofs, and the thin erect mane, is of a bluish ash colour tinged with red.

India, Congo, and the southern parts of Africa, are the countries which afford these animals. Before Sparrman, no natural historian had given a description of the elk antelope from personal ob-

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ervation. That enthusiastic student of nature had various opportunities, in his journey from the Cape into the interior parts of Africa, both of examining the form and appearance, and of observing the manners of this species.

They are gregarious, and are often seen in immense herds in the extensive plains on the confines of Caffraria, north-west from the Cape. The industry of the Dutch colonists, who hunt them eagerly for their flesh, hides, and tallow, has almost exterminated them from the districts lying nearer that promontory. Though the elk antelope affords always a considerable quantity of tallow, and is generally fat and bulky, yet he is content with such a moderate quantity of food as he can crop from shrubs and bushes, without requiring large quantities of grain or grass. When hunted, these animals always run, if possible, against the wind, and will even face the hunter rather than flee in a different direction. Their fatness and heaviness render it difficult for them to run along, if hard pursued; and it is probable that they turn their faces against the wind, when pursued, from finding that in this direction they become not so soon so insufferably hot and breathless, as when their progress is assisted by the force of the wind. Some of the hunters pretend that they have seen the elk antelope, when fleeing with all speed before a pursuer, exude from his neck a bloody froth. Sometimes a mixture of melted fat and blood is seen to gush, on similar occasions, from the nostrils of the panting animal. At other times, even the younger and fleetest bucks are seen to drop down dead, when their strength is exhausted in the flight.

The flesh of the elk antelope is excellent food. It is of a fine grain, very juicy, and tastes deliciously. The breast especially, is considered as a

great delicacy. The fat of the heart is not only very copious, but so fine and tender as to be no bad substitute for butter ; and the Dutch farmers at the Cape use it without scruple in dressing their victuals.

The hide on the neck of the elk antelope is very thick and tough ; and, next after that of the buffalo, makes the best traces for waggons, halters for oxen, field-shoes, &c. Both the Hottentots and the Boshiesmen use the horns of this animal, with wooden stalks fitted to them, for tobacco pipes ; from which they gulp up large draughts of smoke with the greatest avidity. A good drawing of one of these African tobacco-pipes is given in the first of the plates annexed to the first volume of Sparrman's Voyage.

HARNESSED ANTELOPE.

This is one of the smaller antelopes. Its legs, like those of the other antelopes, are long and slender ; its neck rather long and round ; its forehead broad, and somewhat prominent ; its ears broad ; its horns situated almost on the hinder part of the head, straight, spiral, and flattened so as to have two angular sides ; its tail ten inches in length, and covered with long shaggy hair. The length of this animal, from the tip of the nose to the root of the tail, is about four feet and a half ; the height, from the heels of the hinder feet to the back, two feet eight inches. The hair, over the whole body is short and smooth. The ears are bare within. The females have no horns.

The ground colour of the body of this animal is a deep tawny. Beneath each eye, the face is marked with a white spot. On each side, the body displays six transverse, and two longitudinal white stripes or bands, so regularly disposed, as to

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have the appearance of harnessing. The thighs are marked with white spots. The cheeks and the under part of the neck are white.

This animal is very common in Senegal. It is gregarious. Large herds of harnessed antelopes are seen spread through the plains and woods of the country of Podor. It inhabits the south of Africa, in Zwellendam and the adjoining districts near the Cape ; but appears not farther east than Zwellendam, in those regions, till you reach the country of the Tambuki. The flesh of the harnessed antelope is not tender or delicate.

GUINEA ANTELOPE.

THIS animal is of a more diminutive size than most of those antelopes we have hitherto been describing. It is about eighteen inches high ; with slender legs ; a considerable length of neck ; rather a sharp snout ; its forehead somewhat prominent ; large ears ; dusky eyes, and under each a cavity into which a strong-scented oily fluid is constantly secreted, and there becomes concrete ; its horns not three inches long, slightly annulated at the base, and tapering gradually till they terminate, each in a sharp point ; and between the horns a tuft of black hairs, which serves as one of the most striking characteristics of the animal. The females are destitute of horns. The belly of this elegant animal is white ; its tail, which is short, white beneath, and black above ; the rest of the body of a yellowish brown colour.

ROYAL ANTELOPE.

THIS little creature is only about nine inches high ; its legs are not thicker than a goose quill ;

the male has small, straight, black horns, smooth, shining as jet, and only two inches long ; but the female is hornless ; the ears are broad ; the legs are long in proportion to the size of the body, and very slender ; the hoofs are divided ; the horns are annulated ; and the number of rings on a horn denotes the years of the age of the individual to which it belongs. The colour of this little creature is chiefly a reddish brown ; but the belly is white ; and the tail, which, though short, is covered with pretty long hair, partly yellow, partly red, and partly white.

It is amazingly swift ; it springs readily over walls twelve feet high, climbs the loftiest mountains, and is never caught without the greatest difficulty ; yet, when taken, and familiarized to mankind, it becomes very tame and mild.

It is a native of Senegal, and the other hot regions of Africa ; and such is the tenderness of its constitution, that it can scarce bear transportation, and does not thrive in our colder European climates. It is called by the Hottentots noumetjes ; it utters a long, shrill, warbling cry, amazingly loud for so diminutive an animal. Its flesh is one of the most exquisite delicacies that can appear on the table of the epicure.

INDOSTAN ANTELOPE.

THE most remarkable peculiarities of this antelope are horns bending forwards, a mane on the neck, a bunch on the back, and a long bushy tail.

It is about five feet high ; the hair covering the body is short, soft, and of an ash colour. The tail is two and twenty, and the horns seven inches in length. It is furnished with a dewlap on the

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lower part of the breast, like a bull. The legs are of an elegant slender form. The neck resembles that of the camel.

This animal is an inhabitant of the most remote parts of the Mogul's dominions in India: it is a ruminating animal. It lies down and rises like the camel. Its voice is of a harsh croaking sound.

SWIFT ANTELOPE.

THIS animal is chiefly distinguished by having the extremities of its horns bent forwards in the same manner as those of the chamois bend backward. The ground colour of its body is tawny; but the belly, the lower part of the sides, the rump, and the thighs, are of a pure white. The fore part of the neck is also marked with a milk-white spot. The individuals of the species, however, are not all uniformly coloured. The horns are eight inches in length, black and round, and bent forward at the tips. The length of the body is commonly about four feet; and its height approaches to three. Both sexes have horns.

Africa is the native country of this species. They are timid and gentle, easily tamed, but so amazingly swift, that they seem to need neither defensive weapons nor ferocity of manners to protect them from the tyranny of mankind. The velocity of their flight has been compared by Ælian to the awful impetuosity of a whirlwind.

RED ANTELOPE.

THIS animal resembles the roe buck in size. It is about four feet in length, and in height two feet three inches. Its horns are five inches and a half long, almost smooth, only with one or two slight rings at the base, and bent forwards at the

point, but not so much as those of the preceding ; its body is all over of a pale red colour ; its ears are longer than its horns.

This species is a native of Africa. They abound in the country of Senegal, and in the neighbourhood of the Cape. Sparrman considers the steenbock as a variety belonging to this species, distinguished by a white spot over the eyes.

STRIPED ANTELOPE.

THIS animal, the koedoe of the Dutch colonists at the Cape of Good Hope, is of a beautiful tall figure, with long slender shanks ; and though of a less clumsy and heavy form, larger than the elk antelope. The male koedoe is distinguished by large spiral horns, with a ridge following the wreath, compressed sideways, consisting of three flexures, and measuring often between four and five feet. The body of the animal is commonly nine feet long, and four in height ; its predominant colour is a rusty brown ; the face is marked with two white lines, originally one from the corner of each eye. A brownish white stripe extends along the ridge of the back. Eight or nine white stripes run down the sides. The posterior part of the belly, with the fore part of the hinder leg, are also white. A short mane adorns the upper part of the neck. A few long hairs hang between the throat and the breast. The tail is brown above, white beneath, and two feet in length. The mouth of the koedoe is furnished with cartilaginous processes resembling tusks.

This species inhabits the south of Africa. They are well known to the Dutch colonists at the Cape of Good Hope, and have not escaped the notice of the curious travellers from Europe who have visited that region. Shrubs and low bushes afford

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their favourite food. Though their form seems to promise agility and speed, yet are they said to run slowly, and to become soon fatigued. No other antelope is so easily overtaken by the hounds. But when the foe approaches, the male turns, and bravely defends himself with his horns. The female, though not furnished with these weapons of defence, is not swifter than the male. The flesh is excellent food, the marrow delicious.

COMMON ANTELOPE.

THE animals of this species are somewhat inferior in size to the fallow-deer. The general colour of their body is a dusky brown, mixed with red. The belly and the inside of the thighs are white. The orbits of the eyes are likewise white; and a white spot marks each side of the forehead. The horns are about fourteen inches long, marked with distinct rings nearly to the points, and bended, by a double flexure, into a form resembling that of the ancient lyre. The females are without horns.

Barbary and India are the regions which this species is known chiefly to inhabit. The female goes nine months with young, and produces only one at a birth.

Bengal, as we learn from travellers, affords a variety of this species, the horns of which resemble those of the common antelope of Barbary; but its face, back, and sides, are of a very deep brown colour; its belly and the inside of its legs are white; its tail is black above and white beneath; and its size superior to that of the last variety. Mr. Pennant distinguishes this animal by the epithet brown, and conjectures that it may be the same with the lidmee of Barbary, mentioned by Dr. Shaw in his Travels.

In the cabinet of the Marquis de Marigny, in the Museum that was lately sir Ashton Lever's, and in Mr. Pennant's cabinet of natural curiosities, there are several horns which appear to have belonged to a third variety of this species. They are of a spiral form, but smooth and black. Two are joined in a parallel direction, with the points turned different ways; and we learn, that, joined in this manner, these horns are carried by the Fakirs and Santons in India, as a sort of a weapon, and an ensign of dignity. With the animals which afford them our European naturalists are as yet but imperfectly acquainted.

BARBARY ANTELOPE.

This species is distinguished by horns about a foot in length, first reclining backwards, then bending in the middle, and reverting forwards, annulated with about thirteen rings, of which those nearest the base encircle the whole horns, but those approaching to the point are only half rings, and also furrowed longitudinally. In size and figure these animals nearly resemble the roe buck. The colour of the upper part of the body is a reddish brown; the buttocks and the lower parts are white: a strong dusky line divides the brown from the white. Each knee is furnished with a tuft of hair. The tail is black above, and white beneath.

This species is gregarious. In Barbary, Egypt, Arabia, and Syria, they are seen in numerous herds.

KEVEL.

Its horns are, like those of the last species, marked with rings, from fourteen to eighteen in number; but instead of being round, they are

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flattened on the sides. It is equal in size only to a small roe buck. In other respects, it bears an exact resemblance to the antelope of Barbary. Both females and males are furnished with horns.

These animals are known for inhabitants both of Senegal and of Persia. They herd together, and are easily domesticated. Their flesh is juicy, and of a very agreeable relish. It has the odour of musk.

SPRINGER.

THE horns of this species are seven inches long, of a deep black colour, annulated near the base, but smooth towards the points, for more than one half of their length. They rise from the base, almost in an upright direction; but as they advance, bend gently towards the sides; forming each, with more than the upper half of its length, a beautiful curve. The horns of the two sexes are similar both in size and shape. The ears are six inches and a half in length. The whole length of the animal, from the nose, is but a very little more than four feet. The tail is somewhat less than a foot long, and towards the extremity very slender, and covered with a few dark brown hairs, from one to two inches and a half in length. The eyes of this antelope are highly beautiful; but the face is not marked with *pori ceriferi* under them. Brown is the predominant colour of the body of this animal. The face, the belly, and the rump are white. A white list, which the animal can expand at pleasure, extends from the tail half way up the back. The lighter brown of the neck and sides is separated from the white parts of the body, by brown stripes of a much deeper shade. The ears are ash-coloured, and partly covered with very short hairs, partly bare.

These antelopes are inhabitants of Africa. In seasons of extreme drought, they advance from the northern interior parts of that continent towards the Dutch settlements, and proceed straight forwards till they penetrate to the sea. When their progress is stopped by this barrier, they return by the same road. They journey in immense herds, Dr. Sparrman shot one of a herd of about two thousand, that came all to drink at the same well. M. Vaillaint, on his return from visiting the Gonaquis and the Caffres, to the Cape, travelled a while in the middle of a herd of these animals, migrating in search of water and cool shelter; the number of which he estimates at much more than fifty thousand. He, with his dogs, oxen, carriages, and attendants, travelled in the midst of the herd, without giving them any alarm. He shot among them and killed three, without scattering the rest. So peaceable, so insensible to danger, is the species, or so difficult is it for individuals wedged into so immense, unwieldy a herd, to save themselves by flight. Hyænas, lions, and other beasts of prey, attend them on their march, and thin their numbers with eager rapacity. The Hottentots call them the lion's flocks of sheep.

The form of the springer is remarkably elegant. Its manners are mild and playful. It runs with considerable velocity; and its race is frequently interrupted by a bound, to the elevation perhaps of two yards. At that height, the animal seems to suspend itself for a few moments in the air; sometimes expands the white list on its back, and by drooping its head, and gathering its feet together, raises that part into a convex form; and, at other times, depressing its belly, sinks its back into a concavity, till the rump and the neck almost meet.

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springers are not regularly periodical. They forsake tracts of country which are desolated by drought, or which they have bared of herbage, for others where they may find water and pasture. According to Dr. Sparrman's account, they are quickly dispersed before the pursuer when assembled in moderate herds. Their flesh is juicy, and of a good taste. In the collection of living animals kept by the Dutch governor, there are many of this species; yet their economy is very imperfectly known. Sparrman gives a fine figure of a springer.

CHINESE ANTELOPE.

THIS species, the tzeiran of Buffon, the yellow goat of Du Halde, in his account of China, called by the Mongals dseren, by the Chinese hoang yang, and whang yang, are distinguished by yellow annulated horns, nine inches long, diverging much near the points; but having these turned towards each other. The body is nearly four feet and a half long, and in height two feet and a half. The head is of a thick form, and the nose blunt and convex above. The ears are small and sharp-pointed. The structure of the wind-pipe forms a remarkable protuberance on the neck. The pits in the groin are uncommonly large. The tail is short. The females are destitute of horns. From the beginning of May, the period at which the animal changes its coat, the hair continues, through summer, short, close, and tawny. As winter advances, it becomes long, rough, and hoary.

These animals abound in the deserts inhabited by the Mongal Tartars, and through all the wide tract of country between Tibet and China. They are likewise among the animals hunted by the Bu-

ratti, and are spread through the country between Tangut and the borders of India. They associate in herds. Low rocky hills and dry sunny plains are their favourite haunts. They select the sweetest plants. They avoid woods and water with the most fearful solicitude. In running and leaping, they exhibit amazing agility, and are almost indefatigable. When taken young, they are easily tamed. The young are produced so late in the season as the month of June. They are not less watchful of their safety than swift. But notwithstanding their vigilance and velocity, they escape not the Mongal hunters. They spy out the herd from an eminence, surround them secretly, and easily shoot them attempting to escape. When one of the herd breaks through, all his companions follow in a single line; whatever the obstacles which opposed their passage; however certain the dangers into which they run. The hunters use a sort of whizzing arrows with broad heads, and having a round piece of bone with holes upon the shaft; the noise of which contributes much to stupify and confound the animals.

OUREBI.

THIS, which seems much allied to the ritbock, is thus described by Mr. Pennant, from Mr. Allamand's Supplement to the Count de Buffon's History of Quadrupeds.

"Antelope with small straight horns, small head, long neck, long pointed ears. Colour above a deep tawny, brightening towards the sides, neck, head, and legs; lower part of the breast, belly, buttocks, and inside of the thighs, white. Tail only three inches long, and black. Hair on the body short; under the chest long and whitish; on each knee a tuft of hair: the females are horn-

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less : length three feet nine inches to the tail. Inhabits the country very remote from the Cape of Good Hope. Seldom more than two are seen together ; they generally haunt the neighbourhood of fountains surrounded with reeds. Are excellent venison."

Shaw is not without some suspicion that this may be only a variety of the ritbock.

KLIPSPRINGER. *Oreotragus Saltator*.

This species is to be numbered among the late acquisitions in natural history ; having been first described by Dr. Forster.

It is a native of Africa, and is known to the Dutch residents at the Cape of Good Hope by the name of klip-springer. It inhabits the highest and most inaccessible parts of the rocky mountains beyond the Cape ; leaping with surprising agility from crag to crag, over the most tremendous abysses.

Its size is that of a roebuck, and its colour pale yellowish tawny, accompanied with a very slight greenish tinge ; the horns are quite straight, slender, upright, and sharp-pointed : they are slightly wrinkled at the base, and are about five inches in length. The female is said to be destitute of horns, and has the head marked by some black or dusky streaks ; the tail is extremely short, so as to be scarce visible. The flesh of the klip-springer is much esteemed as an article of food. The Count de Buffon, in his sixth supplemental volume, seems to consider this species as a variety of the nagor or red antelope.

WHITE-FACED ANTELOPE.

So great is the similitude between this species and the flat-horned antelope, that the chief difference appears to consist in size ; this being larger than a fallow deer. The horns resemble those of the animal before mentioned, and are sixteen inches long, and about five between tip and tip ; they are very strongly annulated in the male, but said to be nearly smooth in the female ; the face is white ; the cheeks and neck, in the living animal, of a bright bay ; the back, and upper parts of a ferruginous brown, with a dark stripe down the back ; the belly and rump white, as was also, in the Leverian specimen, the lower half of the legs ; the sides of the body are marked, as in many others of this genus, with a dark or blackish stripe ; the tail is about seven inches long, covered with black hairs, which extend some inches beyond the end. The figure of the kewel, or flat-horned antelope, in the sixth volume of the Count de Buffon's supplement, so perfectly represents this species, that it might pass for a very good representation of it ; and Shaw confesses himself to be extremely sceptical as to the supposed specific distinction of this as well as of some other antelopes.

The specimen which was preserved in the Leverian Museum measured rather more than three feet from the hoofs to the top of the shoulders, and about five feet to the top of the horns.

RITBOCK.

THE ritbock, or ritrebock, so named from its chiefly frequenting reedy places, was first described by Mr. Allamand, to whom a specimen was

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sent by captain Gordon. Mr. Allamand informs us that its size is that of a roe buck, and its colour a very elegant pale grey, with the throat, belly, hips, and insides of the limbs, white, but without any dusky line of separation along the sides of the body, as in many other antelopes. The horns are black, glossy, slightly annulated for about half their length, and are about one foot three inches long, bent slightly forwards, and sharp-pointed: the ears are very long, and near the base of each is a bare spot; the tail is eleven inches long, flat, and covered with long white hairs; the eyes are black and beautiful, with sinuses beneath. Mr. Allamand adds, that he received another specimen, which resembled the former entirely as to the horns, but differed in colour, being of a reddish tawny. The female ritbook resembles the male in colour, but has no horns, and is rather smaller. Mr. Allamand farther informs us, that this animal is called by the Hottentots á, ei, á, each syllable being pronounced with a kind of clacking of the tongue, not easily described or imitated by an European.

The ritbooks are chiefly found about a hundred leagues to the north of the Cape of Good Hope, in woods, and among reeds and sedges in watery places. They go in small herds, and sometimes only in pairs.

BOSBOK.

In its general form this seems most allied to the harnessed antelope, but is said to be rather smaller. Like that species, it inhabits woods, and is found at a great distance above the Cape of Good Hope. Its colour is a dark brown above, and white beneath; the head and neck having somewhat of a rufous cast, and the thighs are

marked with several small round white spots. The horns measure from ten to thirteen inches in length, and are black, and marked in a somewhat spiral direction, with circular rings. On the top of the neck and back is a slight appearance of a mane; the tail is about six inches long, and white. The female is said to be destitute of horns. The voice of the bosbock resembles the barking of a dog.

CINEREOUS ANTELOPE.

THIS is described by Mr. Pennant from one of Mr. Schreber's plates, of which the description is yet unpublished. It appears to be an elegant species, and is supposed to be a native of Africa. The head, hind part and sides of the neck, back, sides, shoulders, and thighs, of a most elegant greyish ash colour; front of the neck, breast, belly, and legs, pure white; horns marked with spiral wreaths. Mr. Pennant places it among those whose horns incline forwards.

SUMATRAN ANTELOPE.

THE Sumatran antelope seems to have been first mentioned by Mr. Marsden, in his account of that island, under the name of cambing ootan, or goat of the woods. A specimen is preserved in the British Museum, which is about the size of a common goat, but stands considerably higher on its legs; its colour is an uniform black, but each hair, when narrowly examined, is grey towards the base; on the top of the neck, just above the shoulders, is a patch of whitish, bristly, long, straight, hair, much stronger than the rest, and having somewhat the appearance of a partial mane; on each side the lower jaw is a longitu-

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nal patch of yellowish white; the ears are of a moderate size, marked internally with three obscure longitudinal bands of white, as in some other antelopes; the horns are six inches long, bending slightly backwards, sharp-pointed, black, and annulated near half their length with prominent rings; the tail is about the length of the horns, and sharpish; the hoofs rather small and black; the hair on the whole animal is rather harsh, and not lighter coloured below or on the belly, than on the upper parts.

CORINE.

THIS species have very slender horns, not marked with rings, but with circular rugæ. In size they are smaller than the roe buck. The neck, the body, and the flanks are tawny; the belly and the inside of the thighs white, and separated from the sides by a dark line. The ears are large. A white, and, beneath it, a black line, marks each side of the face. The knees are furnished with tufts of hairs.

Senegal, and some other parts of Africa, are the country of this animal. Its colour, its velocity in running, and agility in leaping, have induced some naturalists to suspect that it might be the female of the kevel, or flat-horned antelope. But its horns are remarkably different from those of that species.

CERVINE ANTELOPE.

THE horns of this antelope rise almost from one base, and widening as they advance, bend, first forwards, and then, after rising for a considerable length, almost in an upright direction, turn their points backward. Measuring along the exterior curvature, they are from six to nine inches in

length; they are annulated nearly to the points; entirely of a deep black colour; and common to both sexes.

It is somewhat above four feet in height. A cinnamon colour predominates over its body. The forehead is covered with black and brown hairs intermixed. A broad black streak extends over the hinder part of the haunch, down the thigh, as far as to the knee. The anterior parts of both the fore and the hinder legs are also marked with black. Two narrow stripes of the same colour, rise one behind each ear, and run nearly together along the ridge of the back. The pori ceriferi under the eyes are exceedingly small. The face exhibits at least the rudiments of a beard and whiskers. The tail reaches nearly to the joint of the leg; it is covered with long bristly hairs, but does not terminate in a tuft. The legs are of the same slender and elegant form as those of the other antelopes. The buttocks are finely rounded. The ears are asinine. The head is large, and the forehead high. The animal has no teeth in the upper, and only eight in the lower jaw.

This species are natives of Africa. Naturalists have become acquainted with them in Barbary, and in the neighbourhood of the Cape. The ancient Romans, who ransacked almost every forest and range of mountains through the known world, for wild beasts to exhibit in the Circus, were not strangers to this animal. Pliny mentions the Bubalus as an inhabitant of Africa, and as somewhat between a calf and a stag in form. The same animal seems to be a native of Arabia. Travellers tell, that its young are easily tamed, and associate readily with other cattle. The Arabian name is Bakar Uasch, or Bekker el Wash.

The inhabitants at the Cape are familiarly acquainted with these antelopes. They have not

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indeed attempted to domesticate them; but they often pursue and shoot them in the chace. Herds of them range through all the districts in which the Dutch colonists are settled. Sometimes a solitary individual or a single pair are met with. Even at its full speed, this animal seems to gallop with a heavy pace: yet, its motion is not slower than that of any other of the large antelopes. When pursued, it often turns and gazes on its pursuer. Fighting, it drops on its knees like the gnu, in order to rush on its antagonist with the greater impetuosity.

Its flesh is somewhat dry, but of a fine grain, and of an agreeable high flavour. The Dutch colonists make handsome spoons of its horns. The cerumen which oozes from its pori ceriferi, is esteemed by the Hottentots as a rare and excellent medicine.

The Senegal antelope of Mr. Pennant is regarded merely as a variety of this species. Its head, its loins, its ears, are all nearly of the same form as those of the cervine antelope. Its tail is in the same manner covered with coarse bristly hairs. The whole skin is seven feet in length. But if it have a mane, as Mr. Pennant represents, that no doubt affords reason for ranking the animal as a distinct species. It is an inhabitant of Senegal. The French call it *La grande vache brune*.

GAMBIAN ANTELOPE.

This species bears a considerable resemblance, in shape and colours, to what we have considered as a second variety of the last species. Its horns are thirteen inches long, and annulated with eight or nine rings, but smooth at the points. Its size is equal to that of the fallow deer. Its fore legs

have the knees protected, by a covering of long hairs.

It is an inhabitant of Gambia and Senegal, in Africa ; one of the most timid animals of the kind ; when pursued, it hesitates not to throw itself down rocks and precipices.

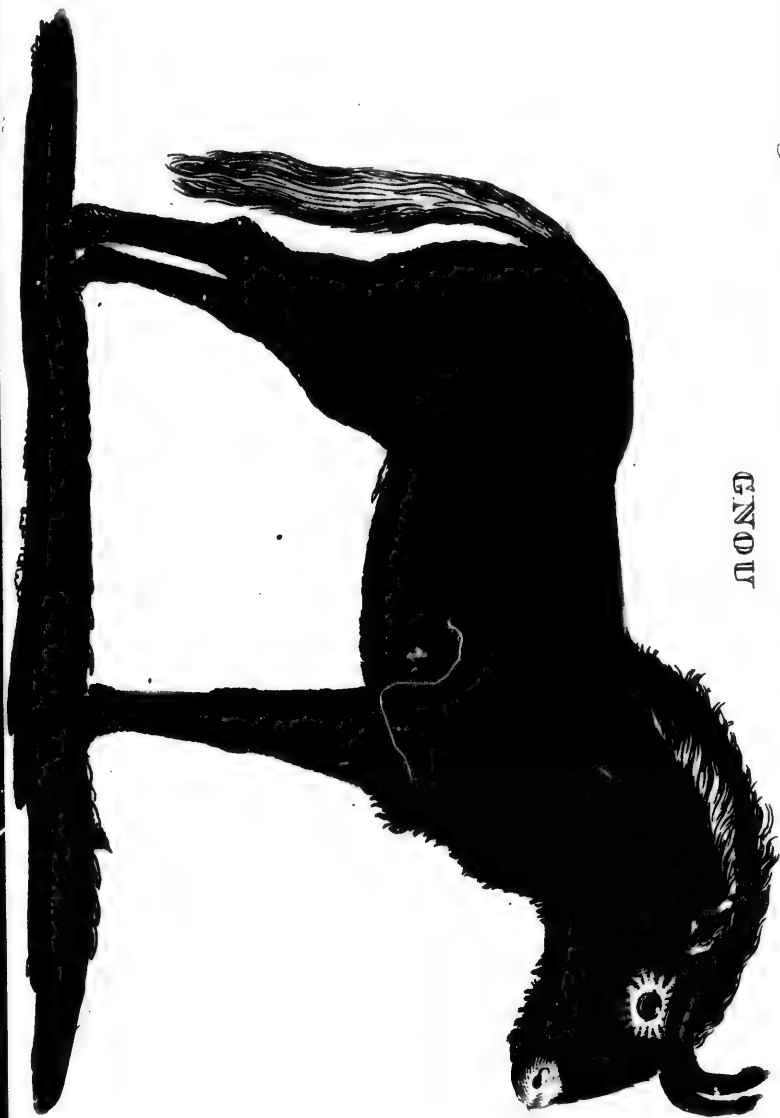
GULDENSTED'S ANTELOPE.

THIS species was first described by Mr. Guldenstedt, in the Petersburg Transactions. He informs us that it was found in Persia, between the Caspian and the Black seas ; that its size and general appearance is that of a roe buck ; that it is of a gregarious nature, and feeds principally on the *artemisia pontica*, or pontic wormwood. The horns are about thirteen inches long, and smooth at the tips. The colour of the animal is a cinereous brown above, with the belly and insides of the limbs, and a space surrounding the tail, white ; the tail is short and full of hair. On the fore part of the neck is a protuberance, but not so large as in the preceding species. The flesh of this animal is reckoned extremely good.

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THE form of this animal resembles partly the horse, partly the ox, and partly the stag. It is as large as a middle-sized horse ; the length of its body between five and six feet ; its height between four and five. Its neck, though neither so long nor so slender as the neck of a horse, is, however, longer and more slender than that of the ox, and adorned with a stiff erect mane. Its body displays the elegant proportions of the horse ; and its tail, though somewhat longer, is, like that of the horse,

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copiously furnished with long hair. But the head of the gnu is thick and large, and horned like the head of an ox. On the forehead, between the nose and the flexures of the horns, the face is covered with an oblong square brush of stiff black hairs, turned upwards. On the inferior jaw too it has a beard of thick shaggy hair. Its legs are long, and elegantly slender, like the legs of the stag; the space between the fore legs is covered with long bushy hair. Its horns are rough; they rise on the hinder part of the head; and, bending their direction forward for a short way, almost close to the skin, they turn suddenly upwards, and run back for a considerable length, so as to bear a near resemblance in form, to the sickles commonly used through Scotland in cutting corn. The females are horned as well as the males; nor are the two sexes distinguished from each other by any difference of the horns. The horns of the young gnu are perfectly straight; they acquire their flexure as the animal grows older, and they longer and thicker.

The tail and mane of the gnu are of a light grey colour; the shag on its chin and its breast, and the stiff brush on its forehead, black; and the rest of the body uniformly dark brown.

The gnu is a lively capricious animal, fierce, and dangerous. When irritated, even though at a distance from its enemy, it expresses its resentment by plunging, curveting, flinging out its legs behind, and butting with its head against mole-hills, bars, and other similar objects. These animals feed in large herds; and it is only when a straggler has been accidentally separated from the herd, that any of them is found in a solitary state. The voice of this species has obtained it from the Hottentots the name of gnu; they sometimes utter

a sound like the bellowing of an ox, and sometimes a clearer note.

The gnu is an inhabitant of the south of Africa. It is found chiefly in the districts of Camdeboo and Agter Bruntjes-hoogte. Dr. Sparrman seems even to think that it is confined within those regions.

The flesh of the gnu is very juicy, and more agreeable and nourishing even than beef.

CHAMOIS.

THE chamois is nearly of the same size with the domestic goat. Its neck is slender; its forehead elevated; its horns slender, black, and upright, with the points hooked backwards. Its tail is short. Its hoofs are much divided. Its legs are long and agile; but not remarkably slender. Its ears are long, erect, and pointed. Behind each of the horns, it has a large orifice in the skin of the head. The head is rather short on the upper of the body; but upon the sides, the haunches, the neck, and the belly, long, like the hair of the common goat.

The body of the chamois is commonly, in spring, of a dun or ash colour, which changes in summer to a yellowish brown, mixed with black; and in winter, assuming a darker shade, becomes deep brown. Its forehead is brown. Its cheeks, chin, and throat, with the inner sides of the ears are white. A black line runs along the back. The belly is yellowish. It is an inhabitant of the Alps and the Pyrennees.

These animals are found in flocks of from four to eighty, and even a hundred, dispersed upon the crags of the mountains. They do not feed indiscriminately, but only on the most delicate herbage they can find.

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Their sight is very penetrating, and their senses of smelling and hearing remarkably acute. When the wind blows in a proper direction they are said to be able to scent a man at the distance of a mile or upwards. Their voice somewhat resembles that of a hoarse domestic goat; by means of this they are called together. When alarmed they adopt a different noise, and advertise each other by a kind of whistle. This the animal on watch continues as long as he can blow without taking breath: it is at first sharp, but flattens towards the conclusion. He then stops for a moment, looks round on all sides, and begins whistling afresh, which he continues from time to time. This is done with such force, that the rocks and forests re-echo the sound. His agitation is extreme. He strikes the earth with his feet. He leaps upon the highest stones he can find; again looks round, leaps from one place to another, and, when he discovers any thing seriously alarming, he flies off. This whistling is performed through the nostrils, and consists of a strong blowing, similar to the sound which a man may make by fixing his tongue to the palate, with his teeth nearly shut, his lips open, and somewhat extended, and blowing long, and with great force.

The chamois scramble among the inaccessible rocks of the country they inhabit with great agility. They neither ascend nor descend perpendicularly, but always in an oblique direction. When descending, in particular, they will throw themselves down across a rock, which is nearly perpendicular, and of twenty or thirty feet in height, without having a single prop to support their feet. In descending, they strike their feet three or four times against the rock, till they arrive at a proper resting place below. The spring of their tendons is so great, that, when leaping about among the preci-

pices, one would almost imagine that they possessed wings instead of limbs.

They are hunted during the winter for their skins, which are very useful in manufactures ; and for the flesh, which is good eating. Their chase is a laborious employment, as much care is necessary in order to get near them. They are shot with rifle-barrelled guns. They generally produce two young ones at a birth ; and are said to be long-lived.

NYL-GHAU.

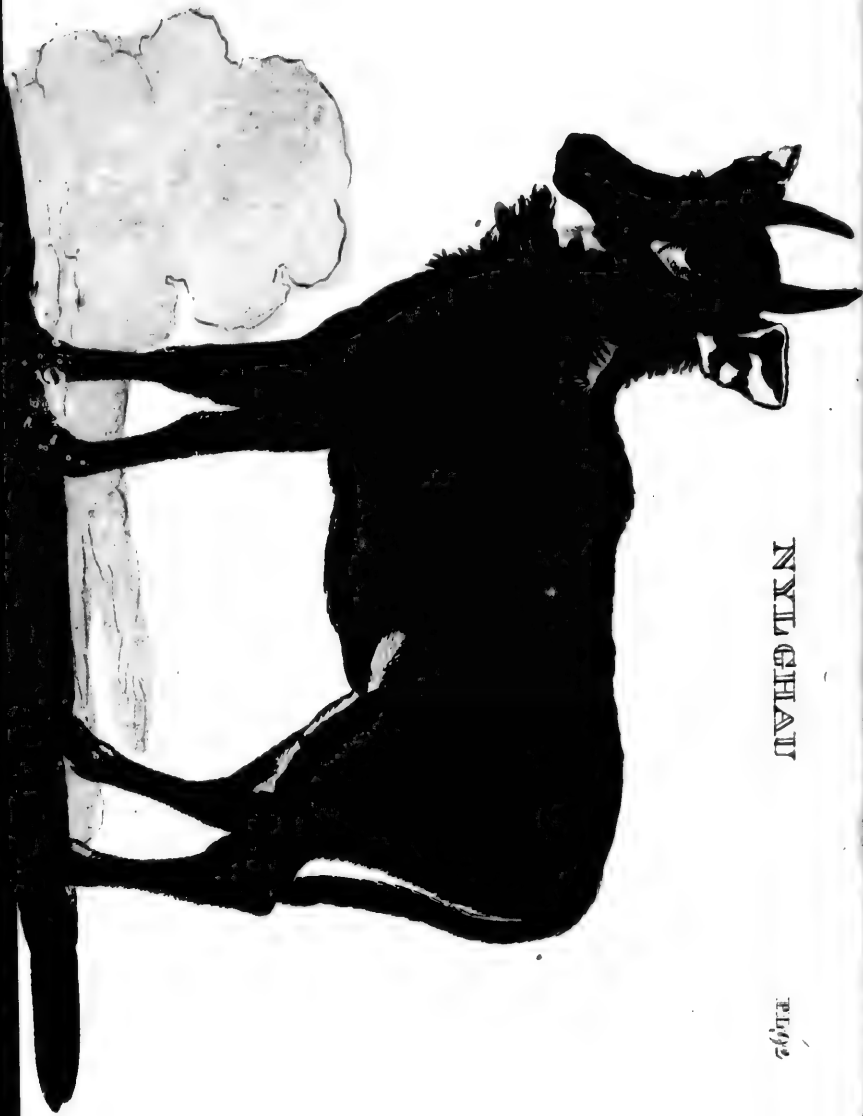
THE height of the nyl-ghau is somewhat more than four feet at the shoulder. The male is of a dark grey colour, and furnished with short blunt horns that bend a little forward. There are white spots on the neck, between the fore legs, on each side behind the shoulder joints, and on each fore foot. The female, which is destitute of horns, is of a pale brown colour, with two white and three black bars on the fore part of each foot, immediately above the hoofs. On the neck and part of the back of each is a short mane ; and the fore part of the throat has a long tuft of black hairs. The tail is long, and tufted at the end.

In the Philosophical Transactions we have an accurate account of this animal by Dr. Hunter. He says, " that although the nyl-ghau is usually reported to be exceedingly vicious, yet the one he had the care of was very gentle. It seemed pleased with every kind of familiarity, always licked the hand, which either stroked it, or gave it bread, and never once attempted to use its horns offensively. It seemed to have much dependance on the organs of smell, and snuffed keenly, and with con-

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siderable noise, whenever any person came within sight. It did the same when any food or drink was brought to it ; and was so easily offended with an uncommon smell, or was so cautious, that it would not taste bread that was offered with a hand that had touched oil of turpentine or spirits.

Its manner of fighting was very particular. This was observed at Lord Clive's, where two males were put into a little inclosure ; and it was thus related by his lordship : while they were at a considerable distance from each other, they prepared for the attack by falling down upon their fore knees, and when they were come within some yards, they made a spring, and darted against each other.

At the time that two of them were in his stable, Dr. Hunter observed this particularity, that whenever any attempt was made on them, they immediately fell down upon their fore knees ; and sometimes they would do so when he came before them ; but as they never darted, he so little supposed this to be a hostile posture that he rather supposed it expressive of a timid or obsequious humility.

The intrepidity and force with which they dart against any object, may be conceived from an anecdote that has been related of the finest and largest of these animals that has ever been seen in England. A poor labouring man, without knowing that the animal was near him, and therefore neither meaning to offend, nor suspecting the danger, came up to the outside of the pales of the inclosure where it was kept ; the nyl-ghau, with the swiftness of lightning, darted against the wood-work with such violence that he shattered it to pieces, and broke off one of his horns close to the root. This violence was supposed to occasion his death, which happened not long after. From this it ap-

pears, that at certain seasons the animal is vicious and fierce, however gentle it may be at other times.

The first of this species that were brought into England were a male and female, sent from Bombay as a present to lord Clive, in 1767. They bred every year. Afterwards two others were sent over and presented to the queen by Mr. Sullivan. These were the two above described.

They are uncommon in all the parts of India where we have settlements, those that are found there having been brought from the distant interior parts of the country. Bernier mentions them in his travels from Delhi to the province of Cachemire. He describes the emperor's amusement of hunting them, and says that sometimes great numbers of them are killed ; which proves them to be in sufficient plenty about their native habitations. In several parts of the East they are looked upon as royal game, and are only hunted by the princes.

SCYTHIAN ANTELOPE.

THE Scythian antelope is about the size of the fallow deer, and of a grey yellowish colour. The horns are annulated, about a foot long, and bent in the form of a lyre. The head is somewhat large, and the neck slender. The tail is about four inches long, naked below, clothed above with upright hairs, and ending in a tuft. The females are without horns.

These animals are found in several of the dreary open deserts of the continent about Mount Caucasus, the Caspian Sea, and in Siberia. They chiefly confine themselves to countries where there are salt-springs, for on the plants that grow near them, and on salt they principally feed. While feeding, they frequently walk backwards, and pluck the grass on each side. They are migratory,

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collecting in autumn in flocks, which consist of some thousands, and retiring into the southern deserts. In spring they divide again into little flocks, and return to the north.

It seldom happens that a whole flock lies down to rest all at the same time, but some are always stationed on watch. When these are tired they give a kind of notice to such as have taken their rest, who instantly rise, and, as it were, relieve the sentinels of the preceding hours. By this means they often preserve themselves from the attacks of the wolves, and the insidious stratagems of the hunters. They are so swift that they are able for a while to out-run the fleetest horse, or greyhound; yet such is their extreme timidity and shortness of breath, that they are very soon taken. If they are but bitten by a dog they instantly fall down, and will not again attempt to rise. In running they seem to incline on one side; and their fleetness is for a short time so astonishing, that their feet appear scarcely to touch the ground. In consequence of the heat of the sun, and the reflection of its rays from the sandy plains which they frequent, they become in summer almost blind, which is another cause of their destruction. In a wild state they seem to have no voice, but when brought up tame, the young emit a sort of bleating, like sheep.

The females bring forth only one young one at a time, and this in the month of May. The young are easily domesticated; but the old ones, when taken, are so wild and timid as to refuse food entirely. The flesh of these antelopes is sometimes eaten, but its taste is to most people very rank and disagreeable. The horns and skins are of considerable use in a commercial view.

GOAT TRIBE.

THE animals of the goat kind live principally in retired mountainous situations, and have a rank and unpleasant smell, especially the males. Although very timid and shy while they continue in a wild state, they are easily rendered domestic, and even familiar. They differ from sheep, not only in the erect position of their horns, but also, when they fight, in rising on their hind legs, and turning the head on one side to strike; for the rams run full tilt at each other, with their heads down.

The horns are hollow, rough, and compressed; they rise somewhat erect from the top of the head, and bend backwards. In the lower jaw there are eight front teeth, and in the upper none; and no canine teeth in either. The chin is bearded.

IBEX.

THE male ibex is larger than the tame goat, but resembles it much in appearance. The head, in proportion to the body, is small. The eyes are large, round, and brilliant. The horns are large, weighing sometimes sixteen or eighteen pounds, and measuring from two to four feet in length; they are flattened before, round behind, and divided by several transverse ridges; are bent backwards, and of a dusky brown colour. The beard is long, the legs slender, and the body short, thick, and strong. The tail is short, and naked beneath. The hair is long, and of a brownish or ash-colour, with a streak of black running along the back. The belly and thighs are of a delicate fawn colour. The female is about a third less than the

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male, and not so corpulent. Her colour is less tawny, and her horns not above eight inches long.

These animals assemble in flocks consisting of sometimes ten or fifteen, but generally of smaller numbers. They feed during the night in the highest woods ; but at sun-rise they quit the woods, and ascend the mountains, feeding in their progress, till they have reached the most considerable heights. They are generally seen on the sides of the mountains which face the east or south, and lie down in the highest places and hottest exposures ; but when the sun is declining, they again begin to feed and to descend towards the woods ; whither they also retire when it is likely to snow, and where they always pass the winter. The ibex inhabits the Alps, Pyrenees, and Carpathian mountains.

The males that are six years old and upwards, haunt more elevated places than the females and younger animals ; and, as they advance in age, they become more inclined to solitude. They also become gradually hardened against the effects of extreme cold, and frequently live entirely alone.

The season for hunting the ibex is during the months of August and September, when they are usually in good condition. None but the inhabitants of the mountains engage in this chase ; for it not only requires a head that can bear to look down from the most tremendous heights without terror, address, and sure-footedness in the most difficult and dangerous passes, but also much strength, vigour, and activity. Two or three hunters usually associate in the perilous occupation ; they are armed with rifle-barrelled guns, and furnished with small bags of provisions ; they erect a miserable hut of turf among the heights, where, without fire or covering, they pass the night ; and, on waking in the morning, they not unfrequently find the entrance blocked up with snow three or four feet deep. Sometimes,

in pursuit of this animal, being overtaken by darkness, amid crags and precipices, they are obliged to pass the whole night standing, and embraced together, in order to support each other, and to prevent themselves from sleeping.

As the animals ascend into the higher regions very early in the morning, it is necessary to gain the heights before them, otherwise they scent the hunters, and betake themselves to flight. It would then be in vain to follow them, for, when once they begin to escape, they never stop till they are entirely out of danger, and will even sometimes run for ten or twelve leagues before they rest.

Being very strong, when they are close pressed they sometimes turn upon the incautious huntsman and tumble him down the precipices, unless he has time to lie down, and let the animal pass over him. It is said also, that when they cannot otherwise avoid the hunter, they will sometimes throw themselves down the steepest precipices, and fall on their horns in such a manner as to escape unhurt. Certain it is, that they are often found with only one horn, the other being probably broken off in some fall. It is even pretended, that, to get out of the reach of huntsmen, they will hang by their horns over the precipices, by a projecting tree, and remain suspended till the danger is over.

The ibex will mount a perpendicular rock of fifteen feet at three leaps, or rather at three successive bounds, of five feet each. It does not seem as if he found any footing on the rock, appearing to touch it merely to be repelled, like an elastic substance striking against a hard body. If he is between two rocks which are near each other, and he wants to reach the top, he leaps from the side of one rock to that of the other alternately, till he has attained the summit. The fore legs being considerably shorter than the hinder ones, enables

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these animals to ascend with much more ease than to descend ; and on this account it is that nothing but the severest weather will induce them to go down into the valleys.

Their voice is a short sharp whistle, not unlike that of the chamois, but of less continuance ; sometimes they make a kind of snort, by breathing hard through the nostrils, and when young, they bleat.

The female, in general, brings forth only one young one at a time. Towards this she exhibits great attachment, and will defend it even against the attacks of wolves and eagles. She sometimes takes refuge in a cavern, where, presenting her head at the entrance, she opposes the strongest enemy with great perseverance.

The ibex is supposed by some to be the stock from which the common goat is derived.

CAUCASIAN IBEX.

This animal is superior in size to the largest he-goats : its form resembles the stag ; its body is covered with shaggy hair ; and, for the greatest part, of a grey or a yellowish rust colour ; a black line runs along the back ; its chin is furnished with a great beard, the colour of which is between a dun and a chesnut ; its head is of a thick form, and remarkably hard ; its horns rise almost out of one base ; diverge and bend backwards as they advance towards the extremities ; but approach nearer each other, and are hooked at the points. They are smooth and black, with sharp ridges on the upper parts, which are hollow on the exterior sides. The tail is very short and black ; the neck and joints are remarkably stout ; the belly affords a bezoar. The females are generally destitute of horns ; and when they happen to be furnished with them, they are very small in comparison with those

of the males. The horns of the males are commonly three feet in length, and often eight pounds in weight.

This ibex displays amazing agility; it often leaps headlong down precipices, and escapes uninjured, by falling on its horns. The moment it reaches the ground, it springs up upon its legs, and bounds nimbly away.

The lower mountains of Caucasus and Taurus, the hills of Laar and Khorazan in Persia, the island of Crete, and the Alps in Europe, are all habitations of this animal.

COMMON GOAT.

THE common domestic goat, believed by some naturalists to be nearest allied to the ibex, and by others represented as a descendant of the Caucasian ibex, is distinguished by horns which incline gently backwards as they rise from their bases, increasing the curve towards the upper extremity. The male is honoured with a beard. The finest bucks have pendent ears, thick thighs, black thick soft hair, a long bushy beard, a short fleshy neck, and a light head. The best she-goats have large bodies, thick thighs, long capacious udders, and soft bushy hair; and walk with a light lively step.

The character of the goat is much less amiable than that of the sheep. Viciousness, subtlety, and lechery, are the predominant qualities of this animal. Even in his ordinary motions he betrays the caprice of his character. He walks, runs, leaps, retires, approaches, in the most irregular manner imaginable. Our domestic goat, like the ibex, is amazingly swift and agile. He mounts the most rugged mountains, and fearlessly approaches the steepest precipices; and though he

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appears thus rashly to expose himself to certain danger, yet such is his address in running, climbing, leaping, and balancing his body in difficult situations, that he scarce ever meets with any unfortunate accident. The plants which the goat prefers for food are chiefly such as are despised by the sheep, the cow, the horse, and most other domestic animals; and indeed grow in situations where few other animals can approach them. Hemlock, euphorbium, and several mosses, are absolutely delicacies to the goat. He devours, with great avidity, the bark, leaves, and branches of most trees.

The she-goat goes five months with young, and brings commonly one or two, but sometimes even three or four at a birth. The kids are usually produced between the end of February and the beginning of May.

Though fond of the summits of bleak and lofty mountains, the goat is but ill qualified to bear extreme cold. In France, goats are sheltered under roofs in winter, as well as black cattle, and fed with branches of trees, gathered for the purpose in autumn, and with cabbages, turnips, and other similar plants. But heat, however intense, is scarce ever injurious to the health of goats; they bask in the rays of the sun, without feeling themselves scorched, or in any other way disagreeably affected.

The domestic goat is well known through Europe, and even in the other regions of the globe. Considerable numbers are kept in the mountainous parts of Wales. The Welch goats are greatly superior in size to any of the breeds cultivated in other mountainous countries, and commonly of a white colour. In Caernarvonshire, they are generally suffered to run wild on the rocks, in both winter and summer. If we may judge from

the expressions of the ancient pastoral poets, goats were in their days tended in Greece and Italy with not less care than sheep. In Norway, goats are numerous, notwithstanding their inability to suffer extreme cold. Nay, in that northern climate, they thrive so prodigiously, that, as Pontoppidan relates, not less than seventy or eighty thousand raw hides are annually exported from Bergen. Even Iceland is not destitute of goats; but that island is so scantily supplied with trees, shrubs, and the other plants on which these animals delight to browse, that they are not numerous nor thriving there. Attempts have been made to introduce this animal into Greenland; and as the goat, when it cannot obtain its favourite vegetable food, refuses not to eat dried fish, it is found capable of subsisting even in that barren and dreary region. Our common domestic goat is not, indeed, a native of America; but with the other chief domestic animals of the Old World, has been conveyed thither by the settlers from Europe. In South America, these animals have multiplied prodigiously; but the climate of Canada has been found too severe. Africa, India, Madagascar and the Oriental islands all afford this animal. Our voyagers to the South Seas found abundance of goats in the island of Juan Fernandez; which, though in consequence of living in regions where they are almost totally sequestered from human intercourse, they were become in their character and dispositions absolutely wild, yet were of the same variety with the common domestic goat of Europe. In Batavia, the Dutch colonists have, among their other domestic animals, herds of goats.

A small island between Bonavista and Mayo is related by an English voyager who visited these, the Cape de Verd islands, and the coast of Guinea,

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in the year 1566, to have contained at that time such numbers of goats, that the Portuguese who inhabited it, used annually to export to Europe about 40,000 skins. The few inhabitants of the island valued the flesh so little, that they cheerfully supplied our voyager and his company with as many carcases as they could use, without expecting any price.

The goat, though less friendly, and less serviceable to mankind than the sheep, affords, however, a variety of articles of no small utility to human life.

The flesh of this animal is wholesome food. That of a spayed goat, six or seven years old, is remarkably sweet and fat. The haunches, salted and dried, make excellent hams. The dried blood of the he-goat is, with some persons, a specific for the pleurisy and inflammatory disorders.

The milk is of the best kind; much more agreeable than that of the sheep, and possessed of some valuable medicinal qualities. The cheese prepared from it is much esteemed in some places. The cream is scarce ever separated for butter. The milk and the whey are both eagerly drank, as powerful remedies in cases of consumption. In the summer months, people of consumptive habits, through Scotland and Ireland, resort in considerable numbers to places where goat's milk is obtained.

The horns of the goat are materials of manufacture, as well as those of the cow and the sheep. Even the disagreeable odour of the he-goat is thought to operate on the human frame as a cure for nervous and hysterical distempers, and as a good preventative against many others. Horses, it is imagined, find it very refreshing; and many persons of skill in the management of horses,

keep a he-goat in their studs or stables, for this very purpose.

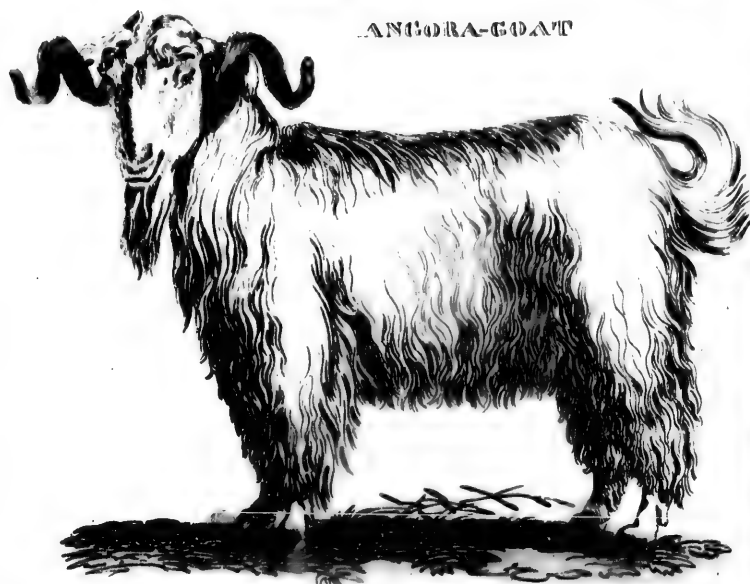
But the skin is perhaps the most valuable part of the goat. It is prepared for a great many purposes, either with or without the hair. It covers the soldier's knapsack, and is manufactured into bolsters and hangings. When dressed without the hair, the skin of the kid especially becomes a soft and pliant species of leather, excellent for gloves, and fit to be made into stockings, bed-ticks, sheets, and shirts. It takes a dye better than any other skin; is susceptible of the richest colours; and when it used formerly to be flowered and ornamented with gold and silver, became an elegant and superb article of furniture. The hair, separated from the hide, is a valuable material to the wig-maker. The whitest wigs are made of goats' hair. That on the haunches is brighter, longer, and thicker, than that on the other parts of the body. A skin well furnished with hair of a good quality, is frequently sold at no less a price than a guinea. Pliny relates, that in Cilicia, and either in Syria or in the country adjacent to the African Syrtes, (for there are different readings of this passage,) the hair of the goat used anciently to be shorn in the same manner as in other places the fleece of the sheep.

The tallow of this animal is also an article of considerable value. It is much purer, and approaches in its nature much nearer to butter than the tallow of either the ox or the sheep. Where goats are numerous, it is often used by the poorer people in the preparation of food. Candles made of it are far superior in whiteness to those made of other tallow, and burn better.

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ANGORA GOAT.

THE Angora goat is shorter in the form of its body than our common domestic goat. Its sides are broader and more flat, its legs shorter, and its horns straighter. Its hair is soft and glossy, like silk, and of a silver white colour, and hangs down in curling locks, eight or nine inches long. Its horns are wreathed in a spiral form, and extend towards its sides. Its ears are plain and pendulous.

These goats are confined within the tract of country around the towns of Angora and Beibazar in Asiatic Turkey. The goats of Cougna, the old Iconium, are probably near allied in their character to those of Angora. Tournesfort, in mentioning the goats of these two different districts, represents those of Angora as distinguished from those of Cougna only by diversity of colour; the latter being all either black or brown. A Baron Alstroemer attempted, with what success we know not, to introduce this breed into Sweden, for the sake of the hair. It is remarkable, that not only the goat, but even the sheep and the hare of Angora have longer and softer hair than the same animals in any other part of the globe.

The length, the fineness, the curling softness, and the beautiful white colour of the hair of the Angora goat, render it a very valuable commodity. It is spun into thread, of which the finest camblets are wrought. The Turkish administration, with a wise policy, prohibit this hair from being exported raw; because the spinning of it affords employment and sustenance to a number of their subjects. An animal furnished with such precious hair, would surely be a valuable acquisition to Britain, if we might hope that it would thrive in

our climate. Perhaps some patriot may one day make the experiment.

VARIOUS GOATS.

STRIA affords a peculiar variety of the goat, with large pendulous ears, and short black horns. The ears are usually between one and two feet in length, and sometimes so troublesome to the animal, that the owners find it proper to cut off one of them for its convenience. This goat is rather larger in size than our common domestic goat; its hair is usually yellow. This variety abounds through the east, and is found also among the Kirghisian Tartars. The city of Aleppo is plentifully supplied with their milk. They appear, from the relation of Aristotle, to have been known to the ancients.

Africa affords a variety of the goat, distinguished chiefly by their dwarfish size. The horns of the male are short, thick, and triangular, and lie flat upon the skull; he is covered with rough hair; and two long hairy wattles hang beneath his chin. The female has smaller horns, a smooth coat, and no wattles.

Whidaw, or Juda, in Africa, breeds a peculiar variety, of a small size, with short smooth horns, turning a little forwards at the points. Some natural historians represent this animal as a native of America; others strenuously contend, that neither the goat nor any other domestic animal was known in America before its discovery by the Spaniards. It would be difficult to decide in the case. This goat is not confined to Widaw; but common also in Guinea, Angola, and some other parts of Africa.

The Capricorn is another variety; the charac-

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teristic marks of which are short horns turned forwards at the ends, marked on the sides with rings; and those more prominent before than behind. **M. Buffon** considers these as an intermediate race between the domestic and the wild goat.

A breed of tame goats resembling the common kind, but without horns, inhabit the country of the **Cabonas**, north of the **Cape of Good Hope**.

The long-horned **Whidaw** is considered by **Buffon** as a variety of the whidaw; the horns are rather depressed than upright, much longer, and bending somewhat outwards and upwards in an elegant manner at the tips; the hair is long and silky, and the whole animal bears some resemblance to a small **Angora goat**. **Buffon** describes it as considerably larger than the whidaw, measuring two feet nine inches in length; while the other was only twenty-four inches long. This variety is represented in the present work, and seems to be the kind mentioned by **M. Sonnini** in his **Travels**, as common in some parts of **Egypt**, and which he says has long, thick, soft, and silky hair, and slender, handsomely turned horns.

SHEEP TRIBE.

Few animals render greater, or more essential service to mankind than the sheep. They supply us both with food and clothing; and the wool alone of the common sheep affords in some countries an astonishing source of wealth. They are all harmless animals, and in general exceedingly shy and timid. Both in running and leaping, they

exhibit much less activity than the goats. They collect in a wild state into small flocks, and though they do not altogether avoid the mountains, generally prefer dry open plains. They fight by butting against each other with their horns, and threaten by stamping on the ground with their feet. The female goes with young about five months, and usually produces one, sometimes two, and rarely three at a birth.

There are, perhaps, strictly speaking, but three different species of sheep; but of the common sheep there are no fewer than ten or twelve very distinct varieties. The horns are hollow, wrinkled, and bent backwards and outwards into a circular, or spiral form, generally at the sides of the head. The lower jaw has eight front teeth; there are none in the upper jaw, nor any canine teeth in either.

COMMON SHEEP.

THE general appearance of this animal is too well known to need any description, but on attentive examination of its properties and habits, will afford considerable information and entertainment.

"Those animals," says Goldsmith, "that take refuge under the protection of man, in a few generations become indolent and helpless. Having lost the habit of self-defence, they seem to lose also the instincts of nature. The sheep, in its present domestic state, is of all animals the most defenceless and inoffensive. With its liberty it seems to have been deprived of its swiftness and cunning; and what in the ass might rather be called patience, in the sheep appears to be stupidity. With no one quality to fit it for self-preservation, it makes vain efforts at all. Without swiftness, it endeavours to fly; and without strength it some-

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times offers to oppose. But these feeble attempts rather incite than repress the insult of every enemy ; and the dog follows the flock with greater delight upon seeing them fly, and attacks them with more fierceness upon their unsupported attempts at resistance. Indeed they run together in flocks rather with the hopes of losing their single danger in the crowd, than of uniting to repress the attack by numbers. The sheep, therefore, were it exposed in its present state to struggle with its natural enemies of the forest, would soon be extirpated. Loaded with a heavy fleece, deprived of the defence of its horns, and rendered heavy, slow, and feeble, it can have no other safety than what it finds from man. This animal is now, therefore, obliged to rely solely upon that art for protection, to which it originally owes its degradation.

“ But we are not to impute to nature the formation of an animal so utterly unprovided against its enemies, and so unfit for defence. The moufflon, which is the sheep in a savage state, is a bold, fleet creature, able to escape from the greater animals by its swiftness, or to oppose the smaller kinds with the arms it has received from nature. It is by human art alone that the sheep has become the tardy, defenceless creature we find it. Every race of quadrupeds might easily be corrupted by the same allurements, by which the sheep has been thus debilitated and depressed. While undisturbed, and properly supplied, none are found to set any bounds to their appetite. They all pursue their food while able, and continue to graze till they often die of disorders occasioned by too much fatness. But it is very different with them in a state of nature ; they are in the forest, surrounded by dangers, and alarmed with unceasing hostilities ; they are pursued every

hour from one tract of country to another ; and spend a greater part of their time in attempts to avoid their enemies. Thus constantly exercised, and continually practising all the arts of defence and escape, the animal at once preserves its life and native independence, together with its swiftness, and the slender agility of its form.

"The sheep, in its servile state, seems to be divested of all inclinations of its own ; and of all animals it appears the most stupid. Every quadruped has a peculiar turn of countenance, a physiognomy, if we may so call it, that generally marks its nature. The sheep seems to have none of those traits that betoken either courage or cunning ; its large eyes separated from each other, its ears sticking out on each side, and its narrow nostrils, all testify the extreme simplicity of this creature ; and the position of its horns, also show that nature designed the sheep rather for flight than combat. It appears a large mass of flesh, supported upon four small, straight legs, ill fitted for carrying such a burden ; its motions are awkward, it is easily fatigued, and often sinks under the weight of its own corpulency. In proportion as these marks of human transformation are more numerous, the animal becomes more helpless and stupid. Those which live upon more fertile pasture, and grow fat, become entirely feeble ; those that want horns are found more dull and heavy than the rest ; those whose fleeces are longest and finest, are more subject to a variety of disorders ; and, in short, whatever changes have been wrought in this animal by the industry of man, are entirely calculated for human advantage, and not for that of the creature itself. It might require a succession of ages, before the sheep could be restored to its primitive state of activity, so as to become a match for its pursuers

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of the forest."---This picture is, however, too highly coloured.

The ewe usually produces only one lamb at a time. There are generally, however, a good many instances of two, in a flock ; and on some very singular occasions, one parent will produce three lambs at a birth. It is observable of this species, that they drink very little. The juice of the vegetables which they eat, and the dew and rain with which the grass is often moistened, supply almost all the moisture that they need.

Sheep, like other animals, are liable to various diseases. Water often gathers in their head, and produces a disorder which soon proves fatal ; the feet of whole flocks are often affected with a sort of mortification, which makes them halt when they walk, and renders them almost unable to run ; at other times, the young especially, are liable to suffer a speedy death from the effects of noxious air evolved from their food in the stomach. The dropsy, phthisic, jaundice, and worms in the liver, are also annually destructive to considerable numbers of sheep. Several sorts of insects infest this animal. A certain gadfly is very troublesome, by depositing its eggs above the nose, in the frontal sinuses ; a tick and a louse likewise feed on the sheep ; of which it is sometimes relieved by the undistinguishing appetite of the magpie and the starling. The ordinary term of the life of those sheep which escape disease and violence, is twelve or thirteen years.

The benefits which mankind owe to this animal are very numerous. Its horns, its fleece, its flesh, its tallow, and even its bowels, are all articles of great utility to human life.

The horns are manufactured into spoons, and many other useful articles. The manufacture of the wool into cloths, has long formed the principal

source of the riches of England. We know not indeed whether the simple Britons and the rude Saxons were acquainted with the important uses of wool; it is most probable that they were not. But Henry II. paid so much attention to the manufacture and improvement of this commodity, as to forbid the use of any other but English wool in the making of cloth. Yet, the excellence of English wool was long known before the English paid much attention to the art of making woollen cloth, or attained any superior skill in it. Wool was then a staple article for exportation; and the Flemings were their merchants. But in the reign of queen Elizabeth, several favourable circumstances, which the talents and the patriotic spirit of that princess enabled her to take advantage of, concurred to establish the woollen manufactory in England, in that thriving state in which it has since continued. In Scotland we have never attained great excellence in this manufacture. Yet, the bonnets, which, though now very much out of use, were in former times very generally used as a covering for the head, and the stockings of such superior fineness, for which the isles of Shetland and the city of Aberdeen are still celebrated, are articles which shew that the inhabitants of Scotland are not less capable of ingenuity in this way, than their neighbours of England. The Spanish wool has been much celebrated; and it is not very long since broad cloth bearing the name of Spanish, was prized above the English. But the wool produced in Britain has been, by various arts, so much improved, as to be now not inferior in excellence to that of Spain; and no woollen cloth is at present esteemed superior to that of English manufacture. The sheep with the finest fleeces in England are fed on the Coteswold downs, and in

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Herefordshire, Devonshire, Lincolnshire, Suffolk, and Yorkshire. The wool of Wales is coarse ; nor is that of Scotland, except in some instances, remarkable for fineness. The wool of the small sheep in the Highlands and the isles of Scotland is superior to the finest Spanish or English wool.

The skin of this animal is prepared into leather for an inferior sort of shoes, for the coverings of books, and for gloves, and into parchment. The entrails, by a proper preparation, are made into strings for various musical instruments.

The milk of the sheep is thicker than cow's milk. Its taste is rather disagreeably strong. It is, therefore, rather made into cheese than used for drinking. The cheese is rich, and of a strong taste. It would probably be still better, if more attention were paid to cleanliness in the preparing of it. It were perhaps best to leave all the milk of the ewe to her lamb.

The flesh of the sheep is perhaps our most valuable article of animal food. It is neither disagreeably coarse, nor yet so tender and delicate as not to afford strengthening nourishment. The flesh of the lamb is, in the proper season, one of the nicest delicacies that the epicure can desire.

The bones are useful for various purposes. Of these, as well as of other bones calcined, are made the cupels used in the refining of metals.

Sheep, when enslaved by man, tremble at the voice of the shepherd or his dog ; but, on the extensive mountains where they range, almost without controul, and where they seldom depend on the aid of the shepherd, they assume a very different mode of conduct. In these situations a ram or a wether will boldly attack a single dog, and often come off victorious ; but, when the

danger is more alarming, they have recourse to the collected strength of the whole flock. On such occasions they draw up into a complete body, placing the females and young in the centre, whilst the males take the foremost ranks, keeping close by each other. Thus an armed front is presented on all quarters, that cannot easily be attacked without danger of destruction to the assailant. In this manner they wait with firmness the approach of the enemy; nor does their courage fail them in the moment of attack; for, when the aggressor advances within a few yards of the line, the rams dart upon him with such impetuosity as to lay him dead at their feet, unless he judiciously saves himself by timely flight. Against the attacks of single dogs or foxes, when in this situation, they are perfectly secure.---A single ram, regardless of danger, will often engage a bull; and his forehead being much harder than that of any other animal, he seldom fails to conquer; for the bull, by lowering his head, receives the stroke of the ram between his eyes, which usually brings him to the ground.

The sheep in the mountainous parts of Wales, where the liberty they enjoy is so great as to render them very wild, do not always collect into large flocks, but sometimes graze in parties of from eight to a dozen, of which one is stationed at a distance from the rest, to give notice of the approach of danger. When the centinel observes any one advancing at the distance of two or three hundred yards, he turns his face to the enemy, keeping a watchful eye upon his motions, allowing him to approach as near as eighty or a hundred yards; but, when the suspected foe manifests a desire of coming nearer, the watchful guard alarms his comrades by a loud hiss or whistle, twice or thrice repeated, when the whole party

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It is very singular that in the holms round Kirkwall, in the island of Mainland, one of the Orkneys, if any person about the lambing time enters with a dog, or even without, the ewes suddenly take fright, and through the influence of fear, it is imagined, instantly drop down dead, as though their brain had been pierced with a musket-ball. Those that die in this manner are commonly said to have two, and sometimes three lambs within them.

The fleeces of the sheep above Cairo are very thick and long. The skins are used by most of the Egyptians for beds ; since, besides their being very soft, it is said that in sleeping on them persons are secured from the stings of scorpions, which never venture upon wool, lest they should be entangled in it. These fleeces are (as at present is done in some parts of England) taken off entire, and one of them, long and broad enough to serve a man as a mattress, was sold as high as twenty shillings sterling, whilst the whole animal alive, and without its fleece, only brought about six shillings.

There are in the voices of all animals innumerable tones, perfectly understood by each other, and entirely beyond our powers of discrimination. It should seem somewhat remarkable that the ewe can always distinguish her own lamb, and the lamb its mother, even in the largest flocks ; and at the time of shearing, when the ewes are shut up in a pen from the lambs, and turned loose one by one as they are shorn, it is pleasing to see the meeting between each mother and her young one. The ewe immediately bleats to call her lamb, which instantly obeys the well-known voice, and, returning the

bleat, comes skipping to its dam. At first it is startled by her new appearance, and approaches her with some degree of fear, till it has corrected the sense of sight by those of smelling and hearing.

Even in Britain we have a good many different breeds of this animal. Linnæus distinguishes the breed peculiar to England as destitute of horns, and having its tail and scrotum depending to the knees. This is the fine large breed for which Warwickshire, and particularly Lincolnshire is noted. They have, in the course of the last twenty years, been introduced into Galloway, and other parts of Scotland, under the denomination of mugg sheep. Their flesh is rather coarse, and their wool intermixed with dry hair.---This is the hornless sheep of Pennant.

The northern regions of Europe, particularly Gothland and Iceland, afford another variety of the sheep, distinguished by having their heads furnished with three, four, or even five horns. Besides this abundance of horns, the sheep of Iceland are remarkable for straight, upright ears, and very small tails. In stormy weather, the sheep of Iceland, by a sagacious instinct, retreat for shelter to the caves and caverns, which are very numerous over the face of that island; but when a storm of snow comes on too suddenly to afford them time to gain such a retreat, the flock gather into a heap, with their heads towards the middle, and inclined to the ground; a posture in which they will remain several days, without perishing under the snow. Among the herbs on which they feed, the inhabitants of Iceland remark that scurvy-grass contributes most to fatten them. When the summer crop happens to fail, the Icelanders are obliged to feed their sheep in winter with chopped fish bones. Those sheep

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appear to afford milk in more abundance than ours. Dr. Van Troil says, they give from two to six quarts a day. The fleece is not shorn from the sheep in that island, as with us; about the end of May it loosens of itself, and is stripped off at once, like a skin.

The Spanish sheep, remarkable for the fineness of their wool, and distinguished by spiral horns, bending outwards, are of a breed believed to have been originally introduced into that kingdom from England. Mention is made, indeed, of two varieties of Spanish sheep, one of which, the Merino, is highly valued for the fineness and quantity of the wool; whereas the fleece of the other is of a very inferior quality. A large proportion of the flocks in Spain are of the former variety; and the care with which they are managed renders the business of the shepherd much more complex in Spain than in most other countries. The number of these sheep fed in Spain, is above four millions. In summer the flocks feed on the mountains in the northern parts of the kingdom; in winter, they are conducted into the milder plains of Estremadura and Andalusia, and distributed into districts. A flock consists usually of about ten thousand sheep, under the management of a head shepherd, with fifty inferior shepherds, and as many dogs. In summer, the sheep are made to eat a great quantity of salt. The rams are, as is usual in other places, kept in separate flocks, except during the rutting time. This begins about the end of July; and they are then distributed among the ewes. The fleece of a ram frequently weighs above five-and-twenty pounds; that of an ewe scarce ever more than five; but the wool of the ram is not equally fine with that of the ewe. In the middle of September the shepherds mark the sheep of their flocks on the loins,

with ochre diluted in water. This smearing with ochre not only distinguishes the sheep of different proprietors, but is also supposed to render the wool closer and warmer, and to contribute to the preservation of the sheep's health. The end of September is the period about which the flocks are conducted from the mountainous pastures where they have spent the summer, to milder and lower regions. The shepherds are careful to conduct each flock, if possible, to the same pastures where it has fed in former winters. The lambs are produced early in the season, in consequence of the rams having been admitted to the ewes about the end of July. In March the lambs are trimmed of a part of their tails, and the tips of their horns ; marked on the nose with a hot iron ; and such of the males as are not meant to be kept for rams, castrated, or at least incapacitated for generation, by the squeezing of the scrotum, till the spermatic vessels are twisted like a rope. In April the flocks are led back to their summer pastures. In May the fleeces are shorn ; every fleece contains three sorts of wool ; the finest on the back and the belly ; a second sort on the neck and the sides ; and on the breasts, the shoulders, and the thighs, a coarser species. Considerably more than nine millions, seven hundred thousand pounds weight of wool are annually exported from Spain ; of which, notwithstanding the abundance and the superior quality of our British wool, more than one third comes to England.

The African sheep form a remarkable variety of this species. Guinea and the desert of Sahara are the places of which they are originally natives ; and they have been introduced into America. Their form is meagre ; their legs are long ; the ears are pendent, and covered, not with wool, but with hair ; the neck is shaggy ; and the cover-

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ing of the whole body has so much of the dryness and hardness of hair, that it cannot be with any propriety denominated wool. These are conjectured to be the animals named by *Leo Africanus Adimain*, and described by him as being of the size of an ass, and of the shape of a ram, with pendent ears.

The Cretan sheep mentioned by *Buffon* under the denomination of *Wallachian*, is remarkable for large, spiral horns. The distance between the horns of the ewe enlarges towards their tops; those of the ram are parallel. They are understood to be natives of *Candia*; numerous flocks of them graze on *Mount Ida*; they are also spread through the other islands of the *Archipelago*, and are frequent in *Austria* and *Hungary*. The butchers in these last mentioned countries, prefer them to all other sheep. In size, and in the nature of the fleece, they differ not remarkably from the common kind.

Those countries of *Asia* which abound most in sheep, afford yet another variety, distinguished by the amazing breadth and bulk of their tails. They do not, as far as we know, differ considerably from our common sheep, in any other respects. They are generally white; yet sometimes vary in colour. The tail is seldom pointed, but commonly either square or round, much like a cushion. The great size of the tail renders it often so incommodious to the sheep, that it is found necessary to support it with a small wheeled machine. Some of these tails weigh more than thirty pounds. *Persia*, *Assyria*, *Arabia*, *Egypt*, *Ethiopia*, *Barbary*, and *Tartary*, all afford this variety.

Of these sheep with large tails, the tails are not all of the same form: some are short and thick; others broad, and of a moderate length;

others so remarkably long, as to obtain the sheep that carry them the denomination of long tailed sheep. The short thick-tailed sheep are common among the Tartars. Tibet affords the broad-tailed sheep ; which are in that kingdom distinguished likewise for the superior fineness of their wool. This wool, not inferior in quality to that of Carmania, is, like it, wrought into shawls for the great omrabs, which are sold at a higher price than those of any other manufacture. The long-tailed sheep form the flocks of the Dutch colonists at the Cape of Good Hope. A late traveller, who advanced from the Cape a considerable way into the inland country, relates that he saw among the Hottentots, in the country adjacent to Orange river, a sort of sheep with much longer tails than those of the sheep about the Cape, and covered, not with wool, but with coarse hair, which gave them, at a distance, the appearance rather of dogs than of sheep. The Cape sheep are not less distinguished by their ears, which are large and pendent, than by their tails. The tail, in its nature between fat and marrow, is a delicacy worthy of the approbation of the nicest epicure. This variety of the sheep was not unknown to the ancient Greeks and Romans. Aristotle mentions them as inhabitants of Syria ; and Pliny, probably on Aristotle's authority, repeats the same fact.

Another variety of this species is the fat-rumped sheep, which is not provided with a tail. Its buttocks swell out like two globes, are perfectly smooth, and scarce leave the os occygis discernible. Its nose is arched ; its ears are pendulous ; its legs are slender ; its head black ; its fleece commonly white, but at times black, reddish, or spotted. The globular buttocks are composed solely of suet ; and are sometimes so large as to

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weigh forty pounds. The whole body of the sheep frequently weighs two hundred pounds. The voice of this animal resembles rather the lowing of a calf than the bleating of a sheep.

Sheep of this character abound through the deserts of Tartary, from the Volga to the Irtish and the Altaic chain. They are remarkably prolific; producing usually two, and not unfrequently three lambs at a birth.

The sheep of Bucharïa are described by Linnæus and Pallas as a particular variety; distinguished by large pendent ears, and a large tail, formed like a cushion. These are represented as a hybridous breed, produced by the copulation of individuals of the long-tailed variety with others, either with broad tails, or of the variety distinguished by the want of a tail. Lamb's skins, possibly of this variety, are brought from Bucharïa, Chiva, and the adjacent countries, to Astrachan, and there sold at a very high price, on account of their glossy appearance and furry texture. The wool of some of them is curled; that of others waved. They are used in Persia, Russia, and other parts, for the lining of coats, and the turning up of caps. These are chiefly the skins of lambs taken out of the bellies of ewes killed during the period of gestation. The instant the lamb is taken out of its mother's belly, it is killed and flayed. Lambs are also killed for their skins, in the same manner, immediately after being brought forth in the natural way; and these are scarce inferior to the others. One of these skins will sell at Astrachan for five or six shillings sterling. They are usually grey or black.

ARGALI.

THIS species is distinguished by horns situated on the summit of the head, which at first rise upright, then bend, and are twisted outwards, like those of the common ram ; and are, in the form of its circumference, flat on the interior side, but rounded on the exterior. The head of this animal resembles that of our common ram ; it has smaller ears ; it is nearly equal in size to a small stag ; its fore are shorter than its hinder feet ; its tail is very short, and white, tipped with yellow. The hair of the body is very short in summer, and of a yellowish ash-colour, mixed with grey. In winter, the hair is an inch and half in length, and of a grey ferruginous colour ; the hair on the neck is, in this season, rather longer than that of the body ; and the hair under the throat still longer. In spring, the animal casts its hair. The females are smaller than the males. These animals, as well as our common sheep, sometimes want horns.

Siberia, Kamtschatka, and the Kurili islands, are the favourite regions of the wild sheep. They are social animals, and feed together in small flocks.

In Kamtschatka, they afford to the inhabitants both food and clothing. The flesh, and particularly the fat, the Kamtschadales esteem as diet fit for the gods ; and there is no labour which they will not undergo in the chase. Whole families abandon their habitations in the spring of the year, and occupy the entire summer in this employment, amidst the steepest and most rocky mountains, fearless of the dreadful precipices which often overwhelm the eager sportsman.

These animals are shot with guns or with arrows : sometimes with cross-bows placed in their paths,

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and discharged by their treading on a string which pulls the fatal trigger. They are sometimes chased by dogs, but their fleetness in a moment leaves these far in the rear. The purpose, however, is answered, they are driven to the heights, where they often stand and view, as it were with contempt, the dogs below; while their attention is thus occupied, the hunter creeps cautiously within reach, and brings them down with his gun.

In some of the other northern countries, a great multitude of horses and dogs are collected together, and a sudden attempt is made to surround them. Great caution is necessary; for if the animals perceive the approach of their enemies, either by their sight or smell, they instantly take to flight, and secure themselves among the lofty and inaccessible summits of the mountains.

The Kamtschadales do not shear these sheep, but leave the wool on till the end of May, when it becomes loose, and is stripped entirely off in one fleece.---The dried flesh is in Kamtschatka an article of commerce.

Father Rubruquis, who visited the nations of Tartary as ambassador from St. Lewis of France, in the relation of his travels mentions this animal under the name of artack, and tells us that he could scarce lift a pair of its horns with one hand.

This animal is ascribed by the ancients to Spain, Sardinia, and Corsica, and still exists in Sardinia and Corsica. Several pairs have been imported from these islands into Britain.

General Paoli, who, after making a brave, but ineffectual effort to vindicate and establish the liberties of his country, found an honourable asylum in Britain, imported from Corsica, a male of this kind named Martino. Martino died at

the age of four years. His horns were then twenty-two inches long ; but the poor animal happened to be ill-used, in the latter part of his life, otherwise his horns would have been considerably longer.

The Corsicans call the male mufro, the female mufra. They inhabit the highest tracts of country in the island. They can only be shot or taken by stratagem ; nay, such is their wildness, cunning, and velocity, that the old ones can never be taken alive. They feed on the most acrid plants. When tame, they eat tobacco, and drink wine. Their flesh, though always lean, is savoury and agreeable to the taste. The skin is thick, and is used in Sardinia, both as an under shirt, for a preservative against the noxious effects of bad air, and a surtout, to defend the body against the impression of thorns and briars, in passing through thickets.

If we may credit Hector Boece, these animals were once inhabitants of the British isles. He ascribes to St. Kilda a species, of which his description nearly agrees with what we have here said of this animal. To confirm his account, which might otherwise perhaps not obtain credit, a figure of an argali has been discovered in a piece of Roman sculpture taken from Antonius's wall, near Glasgow.

The old rams of this species are very strong. It is with difficulty that even ten men can hold one of them. They quarrel like the rams in our flocks of common sheep ; and in their quarrels one often strikes the other down a precipice, where he is instantly dashed in pieces, or soon perishes. The horns of two or more, are sometimes accidentally entangled ; in which case they fall down and perish together. The young are easily tamed. They produce with the common sheep ;

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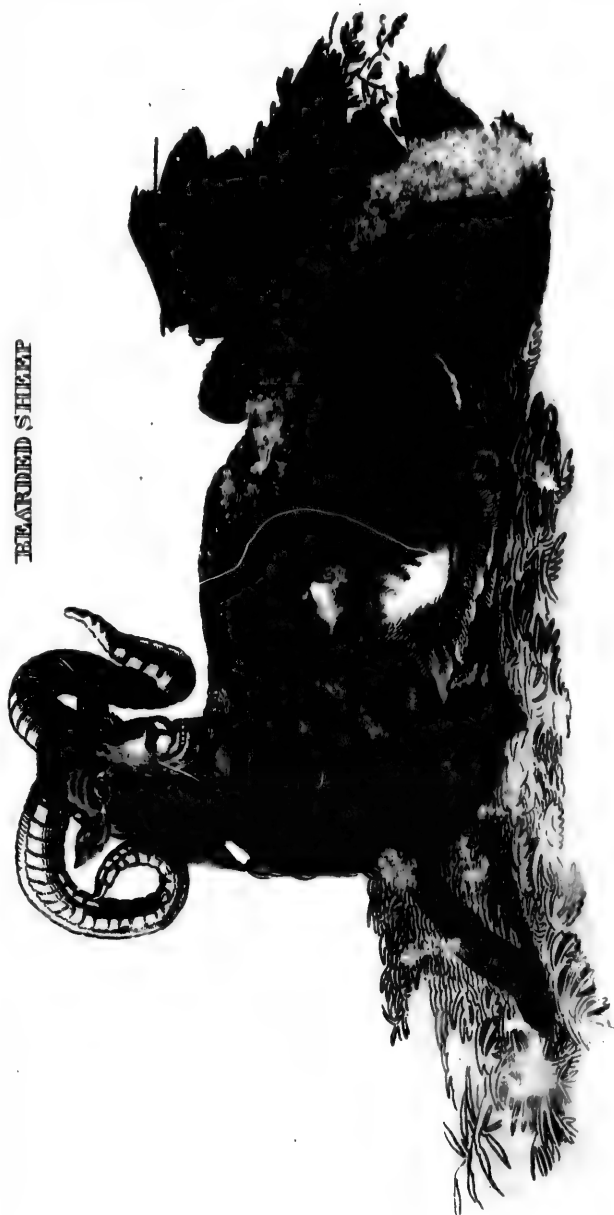
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Another variety is thus described by Mr. Pennant :

“ Sheep with the hair on the lower part of the cheeks and upper jaws extremely long, forming a divided or double beard ; with hairs on the sides and body short ; on the top of the neck longer, and a little erect. The whole under part of the neck and shoulders covered with coarse hairs, not less than fourteen inches long. Beneath the hairs on every part was a short genuine wool, the rudiments of a fleecy clothing. The colour of the breast, neck, back, and sides, a pale ferruginous. Tail very short. Horns close at their base, recurvated, twenty five inches long, eleven in circumference in the thickest place, diverging, and bending outwards, their points being nineteen inches from each other.

Mr. Pennant observed that the learned Dr. Kay, or Caius gives a good description of this animal from a specimen brought into England from Barbary in the year 1561. Dr. Kay named it *tragelaphus* on a supposition of its being the same with the *trogelapus* of Pliny.

PUDU.

THIS is a newly discovered species, having been first described by Molina in the Natural History of Chili.

He informs us that it is a native of the Andes, that it is of a brown colour, about the size of a kid of half a year old ; with very much the appearance of a goat, but with small smooth horns, bending outwards, and without any appearance of beard. It is of a gregarious nature ; and when the snow falls on the upper parts of the mountains,

descends into the valleys in large herds to feed in the plains of Chili, at which time it is easily taken and readily tamed. The female is without horns.

OX TRIBE.

THE animals of this tribe are seldom found except in flat pastures, entirely avoiding mountains and woods, for which their form is extremely ill calculated, as they are much more large and clumsy than most other animals. Their services to mankind are more considerable than those even of the sheep; for, in addition to the qualifications of these animals, they are employed as beasts of draught and burden. Their voice is called lowing and bellowing. They fight by pushing with their horns, and kicking with their feet.

There are about nine different species, many of them however so nearly connected as to render it difficult in many instances to assign a proper distinction between species and variety. The common ox is found in no less than eight different varieties.

In the ox the horns are concave, smooth, turned outwards, and forwards, in a semilunar form. In the lower jaw there are eight front teeth; there are none in the upper, and no tusks in either jaw.

COMMON OX.

THIS animal in its wild and native state, is distinguished by its size, and the great depth and shagginess of its hair, which about the head,



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neck, and shoulders, is sometimes of such a length as almost to touch the ground. His horns are rather short, sharp-pointed, exceedingly strong, and stand distant from each other at their bases. His colour is generally either a dark or a yellowish brown. His limbs are very strong, and his whole aspect savage and gloomy. He grows to so enormous a size as sometimes to weigh sixteen hundred, or two thousand pounds, and the strongest man cannot lift the hide of one of these from the ground. Wild oxen are found in the marshy forests of Poland, among the Carpathian mountains, in Lithuania, and also in several parts of Asia.

In Lord Tankerville's park, at Chillingham, near Berwick-upon-Tweed, there is yet left a breed of wild cattle, probably the only remains of the true and genuine breed of that species at present to be found in this kingdom.

Their colour is invariably white, with the muzzle black, and the whole inside of the ear, and about one-third part of the outside, from the hip downwards, red. Their horns are white, with black tips, very fine, and bent downwards. The weight of the oxen is from thirty-five to forty-five stone, and of the cows, from twenty-five to thirty-five, fourteen pounds to the stone.

At the first appearance of any person near them they set off in full gallop, and at the distance of two or three hundred yards, wheel round and come boldly up again, tossing their heads in a menacing manner. On a sudden they make a full stop at the distance of forty or fifty yards, and look wildly at the object of their surprise: but, on the least motion, they all turn round, and gallop off with equal speed, but not to the same distance, forming a smaller circle; and again returning with a bolder and more threatening aspect than before, they ap-

proach much nearer, probably within thirty yards, when they make another stand, and again gallop off. This they do several times, shortening their distance, and advancing nearer, till they come within a few yards, when most people think it prudent to leave them, not choosing to provoke them further, as it is probable that in a few turns more they would make an attack.

The mode of killing them was perhaps the only modern remains of the grandeur of ancient hunting. On notice being given that a wild bull would be killed on a certain day, the inhabitants of the neighbourhood assembled, sometimes to the number of a hundred horsemen, and four or five hundred foot, all armed with guns, or other weapons. Those on foot stood upon the walls, or got into trees, while the horsemen rode off a bull from the rest of the herd, until he stood at bay, when they dismounted and fired. At some of these huntings twenty or thirty shots have been fired before the animal was subdued. On such occasions the bleeding victim grew desperately furious, from the smarting of his wounds, and the shouts of savage joy echoing from every side. But from the number of accidents which happened, this dangerous mode has been little practised of late years, the park-keeper alone generally killing them with a rifle-gun at one shot.

When the cows calve, they hide their young for a week or ten days, in some sequestered retreat, and go to suckle them two or three times a day. If any persons come near the calves, these clap their heads close to the ground, and lie like a hare in form, to hide themselves. This seems a proof of their native wildness, and it is corroborated by the following circumstance that happened to Dr. Fuller, the author of the History of Berwick, who found a hidden calf two days old, very lean and weak. On

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his stroking its head it got up, pawed two or three times like an old bull, bellowed very loud, went back a few steps, and bolted at his legs with all its force ; it then began to paw again, bellowed, stepped back, and bolted as before. But being aware of its intentions, he moved aside, and it missed its aim, fell, and was so very weak, that though it made several efforts it was not able to rise. It, however, had done enough ; the whole herd was alarmed, and coming to its rescue, they obliged him to retire.

When any one of them happens to be wounded, or is grown weak and feeble through age or sickness, the rest of the herd set upon and gore it to death.

These animals in their domestic state, are patient and peaceable ; neither remarkably stupid, nor eminent for docility ; affectionate to their young ; and even capable of some degree of attachment to those who use them kindly. Bulls are sometimes so ferocious as to attack, even unprovoked, people who pass near them ; but the cow and the bullock are seldom troublesome in this way, unless they have been very improperly managed. The natural character of all ruminating animals is evidently mild and pacific. They are not armed with tusks or claws. Their viscera are formed for the reception rather of vegetable food, which must pass through a long process before it can be converted into aliment, than of animal food, which is more speedily digested.

The age of the cow is known by the teeth and horns. This animal is furnished with eight cutting teeth in the lower jaw ; at the age of ten months, the two middlemost of these fall out, and are replaced by others, that are not so white, but broader ; at the age of sixteen months, the two next milk-white teeth fall out likewise, and others come up in their

room; thus, at the end of every six months, the creature loses and gains, till at the age of three years, all the cutting teeth are renewed, and then they are long, pretty white, and equal; but in proportion as the animal advances in years, they become irregular and black, their inequalities become smother, and the animal less capable of chewing its food. Thus the cow often declines from this single cause; for as it is obliged to eat a great deal to support life, and as the smoothness of the teeth makes the difficulty of chewing great, a sufficient quantity of food cannot be supplied to the stomach. Thus the poor animal sinks in the midst of plenty, and every year grows leaner and leaner, till it dies.

The horns are another, and a surer method of determining this animal's age. At three years old, they shed the outer skin of the horns; at four years of age, the cow has small, pointed, neat, smooth horns, thickest near the head; at five the horns become larger, and are marked round with the former year's growth. Thus, while the animal continues to live, the horns continue to lengthen; and every year a new ring is added at the root; so that allowing three years before their appearance, and then reckoning the number of rings, we have in both together the animal's age exactly.

As we have indisputably the best breed of horned cattle of any in Europe, so it was not without the same assiduity that we came to excel in these, as in our horses. The breed of cows has been entirely improved by a foreign mixture, properly adapted to supply the imperfections of our own. Such as are purely British, are far inferior in size to those on many parts of the continent; but those which we have thus improved, by far excel all others. Our Lincolnshire kind derive their size from the Holstein breed; and the large hornless cattle that



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are bred in some parts of England, came originally from Poland. We were once famous for a wild breed of these animals, but these have long since been worn out ; and perhaps no kingdom in Europe can furnish so few wild animals of all kinds as our own. Cultivation and agriculture are sure to banish these, wherever they are found ; and every addition a country receives from art, drives away those animals that are only fitted for a state of nature.

There is scarcely any part of the ox but is of some use to mankind. Boxes, combs, knife-handles, and drinking-vessels are made of the horns. The horns, when softened with boiling water, become so pliable as to be formed into transparent plates for lanterns ; an invention ascribed to king Alfred, who is said to have first used them to preserve his candle-time measurers from the wind. The dung of these animals is useful as manure. Glue is made of the cartilages, gristles, and the finer pieces of cuttings and parings of the hides, boiled in water, till they become gelatinous, and the parts sufficiently dissolved, and then dried. The bone is a cheap substitute, in many instances, for ivory. The thinnest of the calves' skins are manufactured into vellum. The blood is used as the basis of Prussian blue. Sadlers, and others, use a fine sort of thread, prepared from the sinews, which is much stronger than any other equally fine. The hair is valuable in various manufactures ; and the suet, fat, and tallow, for candles. The utility of the milk and cream is well known.

From the circumstance of these animals furnishing the Gentoos with milk, butter, and cheese, their favourite food, they bear for them a superstitious veneration, founded thus principally in gratitude. There is scarcely a Gentoos to be found

that would not, were he under a forced option, prefer sacrificing his parents or children to the slaying of a bull or cow. Believing fully in the doctrine of transmigration, they are also alarmed at the idea of injuring the souls of those of their fellow-creatures that have taken their abode in these animal cases. This also tends to restrain them from destroying designedly any of the brute creation, and to prevent them from dispossessing, by violence, any being of that life which God alone can give; and they respect it in the flea equally with the elephant.

The Indians, who use the ox in agriculture, think it more convenient for their purposes to be without horns. They have therefore a mode of impeding the growth of these, by making an incision, at a proper period, where the horns are first seen, and afterwards applying fire to the wounds.

The aurochs of the modern Germans, the urus of Cæsar and Pliny, was well known in ancient times as an inhabitant of the Hercynian forest. Cæsar describes this animal as little inferior to the elephant in size; in shape and colour like a common bull; of amazing strength; so ferocious as to attack, even unprovoked, people who approached it; and absolutely untameable.---Their horns, which were large, were often hooped with silver, and used as cups.

The American bison, a variety of this species, has short, rounded horns, pointing outwards. It is covered in many parts with long shaggy hair, and has a high protuberance on the shoulders. The fore parts of the body are excessively thick and strong; and the hinder parts are comparatively very slender.

These animals range in droves, feeding in the open savannahs morning and evening. They re-

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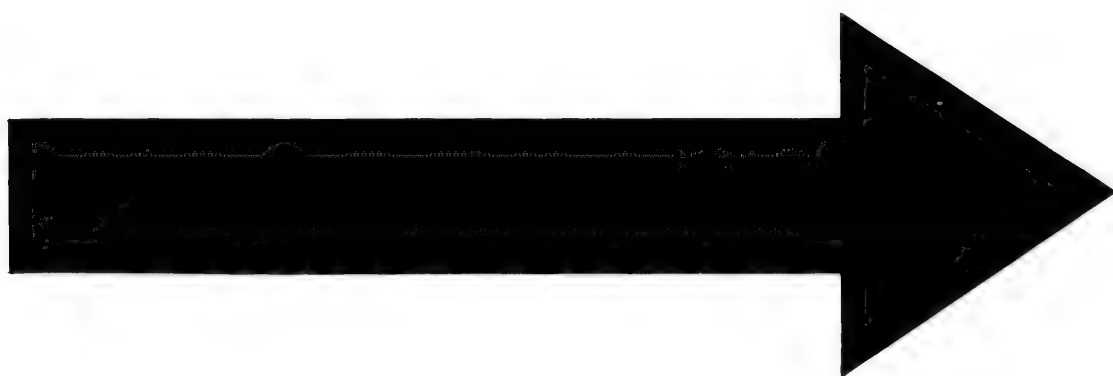
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tire during the sultry parts of the day to rest near shady rivulets and streams of water, frequently leaving so deep an impression of their feet in the moist land, from the great weight of their bodies, as to be thus traced and shot by the artful Indians. In this undertaking it is necessary that the men should be particularly careful; since, when only wounded, the animals become excessively furious. The hunters go against the wind as the faculty of smell in the bison is so exquisite that the moment they get scent of their enemy, they retire with the utmost precipitation. With a favourable wind the men approach very near, since the animals are frequently almost blinded by the hair that covers their eyes. In taking aim they direct their piece to the hollow of the shoulder, by which means they generally bring them down at one shot. If they do not fall, they immediately run upon their enemy, and, with their horns and hoofs, as offensive weapons, tear him in pieces, and trample him into the earth.

They are so amazingly strong, that when they fly through the woods from a pursuer, they frequently brush down trees as thick as a man's arm; and, be the snow ever so deep, such is their strength and agility, that they are able to plunge through it much faster than the swiftest Indian can run in snow-shoes. "To this," says Mr. Hearne, "I have been an eye witness many times, and once had the vanity to think that I could have kept pace with them; but though I was at that time celebrated for being particularly fleet in snow shoes, I soon found that I was no match for the bison, notwithstanding they were then plunging through such deep snow, that their bellies made a trench in it as large as if many heavy sacks had been hauled through it."

In Canada the hunting of the bison is a very



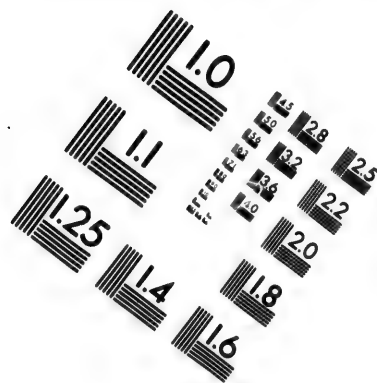
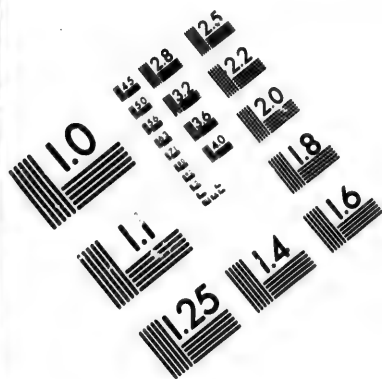
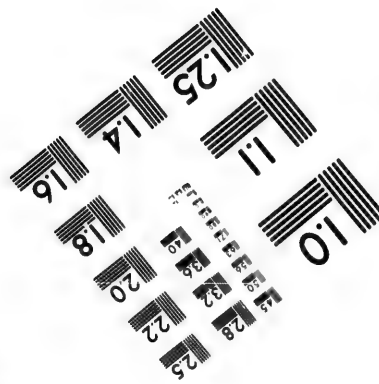
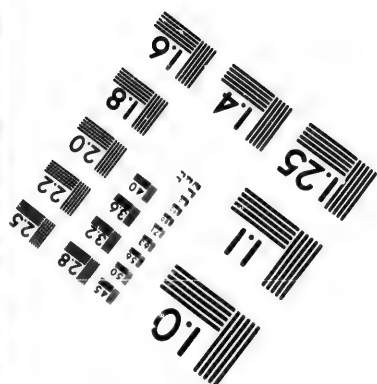
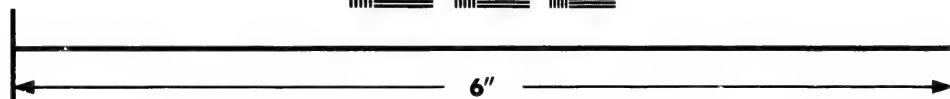
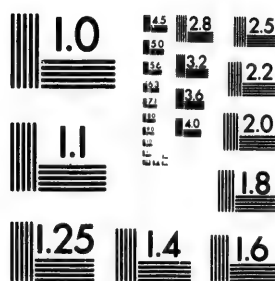
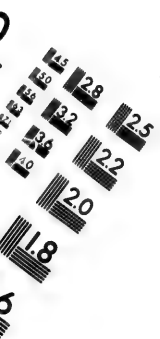


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common employment of the natives. They draw up in a large square, and commence their operations by setting fire to the grass, which, at certain seasons, is very long and dry. As the fire goes on, they advance, closing their ranks as they proceed. The animals, alarmed by the light, gallop confusedly about, till they are hemmed in so close, that frequently not a single beast is able to escape.

In Louisiana the men mount on horseback, each with a sharp crescent-pointed spear in his hand. They approach with the wind, and, as soon as the animals smell them, they instantly make off; but the sight of the horses moderates their fear, and the majority of them, from their luxuriant feeding, are, at certain times of the year, so fat and unwieldy, as easily to be enticed to slacken their pace. As soon as the men overtake them, they endeavour to strike the crescent just above the ham, in such a manner as to cut through the tendons, and render them afterwards an easy prey.

The hunting of these animals is also common in several parts of South America. It commences with a sort of festivity, and ends in an entertainment in which one of their carcasses supplies the only ingredient. As soon as a herd of cattle is seen on the plain, the most fleet and active of the horsemen prepare to attack them, and descending in the form of a widely extended crescent, hunt them in all directions. After a while they become so jaded and weary, that they seem ready to sink under their fatigue: but the hunters, still urging them to flight by their loud cries, drive them at last from the field. Such as are unable to exert the necessary speed for escape are slaughtered. The hunters from these supply themselves with what flesh they want, and abandon the rest to the wolves.

The sagacity which the animals exhibit in de-

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fending themselves against the attacks of the wolves is admirable. When they scent the approach of a drove of those ravenous creatures, the herd throws itself into the form of a circle, having the weakest in the middle, and the strongest ranged on the outside, thus presenting an impenetrable front of horns. When, however, they are taken by surprise, and have recourse to flight, numbers of those that are fattest and most weak infallibly perish.

Attempts have been made to domesticate these animals, by catching the calves and herding them with the common kind, in hopes of improving the breed. This has not, however, been found to answer, for, when they grew up, they always became impatient of restraint, and, from their great strength, would break down the strongest inclosure, and entice the tame cattle to follow them.

The uses of the bison are various. Powder-flasks are made of their horns. The skin forms an excellent buff leather, and, when dressed with the hair on, serves the Indians for clothes and shoes. The Europeans of Louisiana use them for blankets, and find them light, warm, and soft. The flesh is a considerable article of food, and the bunch on the shoulders is esteemed a great delicacy. The bulls, when fat, frequently yield each a hundred and fifty pounds weight of tallow, which forms a considerable article of commerce. The hair, or wool, is spun into gloves, stockings, and garters, that are very strong, and look as well as those made of the finest sheep's wool.

The great Indian ox is another variety of this species. Its horns are short, and bend backwards, close to the neck; its shoulders are loaded with a large lump, the flesh of which is very fat and delicious; its hair is of a reddish colour. When the breed is crossed by intermixture with our

common European cattle, the lump disappears in a few generations. Madagascar affords the same variety; and they grow there to an enormous size. Pliny mentions Indian oxen, of the size of camels, with horns four feet wide. He mentions also Syrian oxen, that wanted dewlaps, but had a bunch on the back.

India affords also another variety of this species; the *bos Indicus* of Linnæus, and the zebu of M. Buffon. It has a lump on the shoulders; but its horns are almost upright, only bending a little forward. It is used both as a beast of draught, and for riding. It is very mild and peaceful, and often displays a degree of affection to mankind.

In Abyssinia there are two distinct races of oxen. One of these is destitute of horns, and is employed in bearing burdens; the others are remarkably large, about twice as big as our common European cattle. The Abyssinians fatten them with milk, and kill them for eating. Their horns are sufficiently capacious to hold five gallons, and are used for pitchers.

Adel, or Adea, and Madagascar, are said afford snowy white cattle, as large as camels, pendulous ears, and hunch backs. White cattle, with black ears, are ascribed to the island of Tinnian. The island of Guam affords cattle of the same appearance. The lant or dant of Leo Africanus, is, perhaps, of this species. Its hair, he informs us, is white; it resembles the ox in shape, but has smaller legs, and comelier horns. Its hoofs are black. Targets, impenetrable by bullets, are made of its hide.

The cattle of Holstein and Jutland are among the largest produced in Europe. Their pasture being very rich, they consequently grow to an uncommon size, and the cows yield a great deal of milk.

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Podolia and the Russian Ukraine, in the tracts adjoining to the rivers Bog, Dnieper, and Dniester, afford a fine breed with large horns, and a dusky line along the back. Vast quantities of these cattle are annually sold in Germany at a high price. The same breed abounds in Hungary.

GRUNTING OX.

THE grunting ox has a short head, a broad nose, and thick hanging lips. His ears are large, covered externally with coarse, bristly, hairs, and pointing downwards, but not pendulous. His horns are short, slender, round, upright, and sharp pointed, and bend inwards; they are remote from each other at the bases; and the hair forms a long curling tuft between them. The whole body is covered with long hair, much like that of a he-goat; and of so considerable a length on the inferior part of the body, as to cover half the legs. His hoofs are large; upon each of the hinder feet there are two tufts of hair, one before, the other behind; on each of the fore feet there is only one tuft, which is placed behind. The shoulders are loaded with a bunch. The tail is long and bushy.

This animal is commonly black all over the body, except on the front, the mane, the ridge of the back, and the tail: these parts are white. The horns of the tame animals of this species have been observed to vary in colour, from red to black; and to be sometimes white as ivory. Some have no horns, but so thick a frontal bone, that it is very difficult to knock them down with an ax.

There is probably a greater and smaller variety

of the grunting ox ; the former much exceeding the bulk of our common cattle.

The voice of these animals is remarkable : instead of lowing, like the former species of this genus, they grunt like a hog. In their manner they are ferocious. Though susceptible of domestication, they retain, even in a tame state, their natural ferocity. When red, or other gaudy colours strike their eyes, they are instantly agitated with fury ; their eye-balls glare ; they raise and move their tails ; and even shake the whole body. The wild breed, denominated buchha, are very dangerous. If the hunter only wounds one of these, without killing him on the spot, he turns and pursues the assailant ; and, if he overtakes him, raises him on his horns, and tosses him to death.—They are used as beasts of burden ; and their milk is a valuable object of commerce among the Tartars. Even the genuine breed were so tame, as to submit to draw the waggons of the wandering Tartars. The owners used to disarm them, by cutting off the tops of their horns. The stomach of the grunting bull is said to afford a bezoar highly esteemed by the nations of the East ; but the tail is still more valuable. It is one of the chief articles of commerce which Tibet affords. Mounted on a silver handle, it forms the chowraw or fly-brush, so necessary, and so generally used through India. People of fashion, both when they walk abroad, and when they appear in ceremony at home, are constantly attended by two servants, with brushes of this kind, (chowrabadars) whose business is to drive away the flies. The tail of this animal is also fastened, as an ornament, to the ear of the elephant. The Chinese adorn their bonnets with tufts of the hair which it affords, dyed red.

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With the Mongals, and with most of the other eastern nations, the cow is an object of worship ; and accordingly, this animal is often respectfully mentioned in their sacred books.

BUFFALO.

THE buffalo is considerably larger and stronger than the ox. His horns extend for a considerable length in an horizontal direction from their bases, and then bend upwards ; they are not round, but flattened ; and on one side sharp. His skin is black ; his hair thin and short ; his tail bare ; and his forehead adorned with a tuft of curling hair. The body of the buffalo is thicker and shorter, his legs longer, and his head smaller in proportion to the size of his body, than that of the ox ; his ears are also larger, and his skin thicker and harder. His eyes are white ; his nose broad and square ; and he has no dewlap. His body is of a square form ; his tail shorter and more slender than that of our common cattle. The horns of these animals are sometimes amazingly large. In the British Museum there is one six feet six inches long, weighing twenty-one pounds, and sufficiently capacious to hold five quarts.

The buffalo exists both in a tame and a wild state. The wild buffalo is very fierce and dangerous, if attacked. He is afraid of fire, and even provoked at the sight of any thing red-coloured. He delights to wallow in mud, is fond of the banks of rivers, and is an excellent swimmer.

Even the tame buffalo is a violent and untractable animal ; next to the hog, the dirtiest of domestic animals ; ungraceful in his appearance, and awkward in his motions. His voice is deeper and

stronger than that of the bull ; and his bellowing hideously frightful.

Notwithstanding the general resemblance which the form of the buffalo bears to that of the common ox, yet the ox and the buffalo are distinct species. They refuse to copulate together ; the female buffalo will not suffer a common calf to suck her, nor will the cow suckle a young buffalo ; the female buffalo goes twelve months with young ; our cows only nine.

The milk of the buffalo, though generally inferior in quality to that of the cow, is used for the same purposes ; in those countries in which the species is domestic, it affords a great deal of cheese. The flesh of this animal is also eaten ; but it is black and hard, has a disagreeable taste, and a more disagreeable smell. The only part that can be called good eating is the tongue. The skin is more valuable than the flesh ; it is solid, pretty flexible, and almost impenetrable ; and is accordingly prepared into excellent buff. The horns are employed in various manufactures. The strength and size of the buffalo render him superior to the ox as a beast for the draught. A ring, passed through his nose, enables the driver to manage him. He carries his head and neck low ; and of consequence the whole strength of the body is employed in drawing. These advantages of size and carriage are so considerable, that two buffaloes will draw as much as four strong horses.

The buffalo is a native of the warm climates. These animals abound in India, Abyssinia, Egypt, and in the neighbourhood of the Cape of Good Hope. They exist in a wild state in Malabar, Borneo, and Ceylon. The negroes of Malabar, and of Guinea, where they are also nume-

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rous, are fond of hunting them. They mount a tree, or hide in a thicket, and shoot the buffalo as he passes.

In Abyssinia, the buffalo grows twice as large as our ox. On account, as well of his enormous size, as of the thickness and blackness of his skin, he has there obtained a name signifying taurelephas.

In India, the tame buffalo is more peaceable and tractable than in any other country. In Egypt too, this animal is sufficiently manageable.

It is said to be a singular sight to see, morning and evening, large herds of them cross the Tigris and Euphrates. They proceed, all wedged against each other, the herdsmen riding on one of them, sometimes standing upright, and sometimes couching down; and if any of the exterior ones are out of order, stepping lightly from back to back, to drive them along.

A very singular circumstance relative to these animals, is recorded by those who completed the voyage to the Pacific Ocean, begun by Captain Cook. When at Pulo Condore they procured eight buffaloes, which were to be conducted to the ships, by ropes put through their nostrils and round their horns; but when these were brought within sight of the ship's people, they became so furious that some of them tore out the cartilage of their nostrils, and set themselves at liberty; and others broke down even the shrubs to which it was frequently found necessary to fasten them. All attempts to get them on board would have proved fruitless, had it not been for some children whom the animals would suffer to approach them, and by whose puerile management their rage was quickly appeased; and when the animals were brought to the beach, it was by their assistance in twisting the ropes about their legs, that the men

were enabled to throw them down, and by that means get them into the boats. And what appears to have been no less singular than this circumstance was, that they had not been a day on board, before they became perfectly gentle.

The buffalo is also an inhabitant, or, at least an occasional visitant of the Gold Coast of Guinea. Bosman relates, that these animals are found all over Guinea; but in such small numbers, that one of them is scarce to be seen in three or four years. On the Slave Coast, they are sometimes found in great numbers. Those in this tract of country appear to be of the same form and character with those in the neighbourhood of the Cape. They are of a red colour. Bosman mentions that those which he saw, though very swift, had the appearance of being lame.

In the large island of Sumatra, in the East Indies, the buffalo, called by the natives carbow, is the principal domestic animal. The buffalo of that island seems to possess some peculiar characteristics, and must therefore be regarded as a distinct variety. Like the other buffaloes that have been already described, the buffalo of Sumatra has a large, heavy body, short legs, and large hoofs; its horns turn backwards, but sometimes point forwards, and are always in the plane of the forehead. The tail is slender, reaches only to the middle joint of the leg, and terminates in a bunch of hair. The female goes nine months with calf; and suckles her calf for six. When crossing a river she carries her young on her back. The voice of the animal is a weak, sharp cry, very unlike the lowing of oxen.

These buffaloes, as well as those of other countries, delight to roll in mud and water. They display great dexterity in throwing the water with the horn over their back and sides, when there is

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not sufficient depth to cover them. The mud, mixed with the water, forms a crust on their skins, by which they are preserved from the stinging of insects ; which, on account of the thinness of their hair, must otherwise prove very troublesome to them. Their proprietors light fires at night, to afford them an opportunity of drying the mud on their bodies, by exposing themselves to the smoke.

Even of these Sumatran buffaloes there are two varieties, the white and the black. Both are employed in labour ; but the white are scarce ever killed for food. Different reasons have been assigned for this exemption ; some of the natives say, that the white are suffered to live uninjured, because they are accounted sacred ; others say, that the only reason is the inferior quality of their flesh.

In Sumatra, the buffalo displays considerable docility and address. It is taught to lift the shafts of a cart with its horns, and place the yoke fixed to them across its own neck. The rest of the harness consists of a breast-band, and a string passing through the cartilage of the nose. This animal is not capable of undergoing much fatigue ; any extraordinary exertions, especially in the heat of the day, are likely to put an end to its life. The female buffalo affords better milk than the cow of Sumatra, but that not in so large a quantity.

Wild buffaloes are also known in the same island. They are considered, not as an originally wild breed, but as stray cattle, and are therefore distinguished by the name of carbow gellan. They are gregarious ; and it is remarkable, that in herds they are not so ready to attack the passenger as when met singly. Like the turkey, they discover an antipathy at red colours. They are as swift in running as an ordinary horse. When alarmed or attacked, they flee for a short distance ; then

face about, and form into a regular body ; and, when the cause of their apprehensions advances nearer, again take to flight ; thus they alternately retreat and face about till they gain some place of security. Among the inhabitants of the forest, the tiger is their principal enemy ; but only the females and the weaker males fall a prey to his rapacity.

An animal of this species, but almost naked, and considerably smaller than those which have been described, was, a number of years ago, exhibited in London, under the name of *bonasus*. Its rump and thighs were quite bare ; the hairs, thinly scattered over the rest of the body, were bristly ; the rump was marked with two dusky stripes, pointing downwards ; the thighs with two transverse stripes ; its horns were compressed sideways, taper, and sharp at the points. It was said to come from the East Indies.

In the Celebes, there is an animal of the size of a middling sheep, which appears to be a variety of the buffalo. It is called *anoa* ; is a gregarious animal ; and is found in small herds on the mountains of those islands, which abound in caverns. It is exceedingly difficult to take any of these creatures ; and even in confinement, they are so remarkably fierce as to rip up the bellies of stags kept in the same paddock.

Ceylon affords a peculiar sort of an ox, which may, perhaps, be referred to this species. Its back stands up in a sharp ridge ; its legs are white half way up ; and it is called the *gauvera*. Mr. Pennant mentions his having received information that there are hunched-backed oxen in that island ; and thinks these the animals intended in the above description.

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Musk ox.

THIS animal, which is only mentioned by Buffon as having a strong smell of musk, and as being, on account of that quality, distinguished by most travellers under the name of musk ox, is considered by Mr. Pennant, with sufficient propriety, it would appear, as a separate species.

The horns of the musk ox seem almost to join at the base ; as they rise, they bend inwards and downwards for a great part of their length ; but near their termination, turn outwards. Near the base, the horn measures two feet round ; it tapers towards its extremity, and is sharp at the point. Measured along the curvature, its length is only two feet. The head and body of this animal are covered all over with dark red silky hairs, which are so long as to trail on the ground, and hide the proportions of its shape. Its shoulders rise in a lump ; and its legs and tail are very short ; it is not so tall as a deer ; but its body is more bulky.

The following more accurate description of a cow of this species we borrow from Mr. Pennant, who formed it from a complete skin, which he was lucky enough to obtain : the nostrils are long and open ; the two middle cutting teeth broad and sharp-edged ; the three on each side of these small and truncated. The lips are covered with short white hairs on the fore part, and with pale brown hairs on the sides. The hair extending down the middle of the forehead is long and erect ; that on the cheeks and the throat long and pendulous, so as to form a long beard. On the neck, the sides, and the rump, the hair depends in the same manner, and reaches nearly to the ground. Between the binder part of the head and the shoulders there

is a thick upright mane of very long, soft hair. Between the bases of the two horns the hair is partly white, and partly of a light rust colour; the mane, which extends to the middle of the back, but becomes gradually narrower towards that part, is a reddish dun. On the middle of the back is a large roundish bed of hairs, only three inches in length, and entirely white upon the surface; but near the roots of a pale brown colour. The hairs upon the other parts of the body are entirely black. The black hair is the longest, measuring not less than seventeen inches. That between the horns, with the mane running to the middle of the back, is finer and softer than any human hair; and the white bed on the middle of the back is almost of the same nature as wool. Under the hair, all over the body, the animal is covered with ash coloured wool, most exquisitely fine.

The length of the hide, from the nose to the tail, is about six feet four inches. The head alone measures fourteen inches. The legs appear to be little more than a foot long. The horns are placed exactly on the sides of the head; they are of a whitish colour; the space between them is nine inches; the length of the horn is thirteen inches and a half; at the base it is eight inches and a half round; it is bent the same way as that of the bull. The ears are three inches long, and stand erect; they are slender and even, sharp at the points, but broad in the middle; they are covered with a thick lining of dusky hair, marked with a white stripe. The hoofs are short, broad, and black; the false hoofs large in proportion to these. The tail is a mere stump, three inches long, and concealed by very long hair.

These animals are confined within a not very extensive tract in North America. They appear

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little farther south than in the country between Churchill river and the river of Seals, on the west side of Hudson's Bay ; from thence they inhabit to the latitude of 73° north, beyond which the human inhabitants of those regions have not penetrated. They are most numerous between the latitudes of 66° and 73° . They are also found in the land of the Cris or Cristinaux and the Assinipoels, as well as among the Attimospiquay, a nation supposed to inhabit about the head of the river of Seals, probably at no great distance from the South Sea ; and it appears that they extend southward, even to the provinces of Quivera and Cibola. Some skulls of animals of this species have been found on the mossy plains near the mouth of the Oby, near Siberia ; but as the species is not known to inhabit that country at present, it has been conjectured that the carcasses to which these skulls belonged, may have been floated on masses of ice from America ; or the species may have been once common to both Asia and America.

These animals seldom visit tracts of wood, but delight in rocky barren mountains. They run swiftly, and display great dexterity in climbing rocks.

They are shot by the Indians for their flesh and skins. The flesh tastes strongly of musk ; and the heart particularly is so much infected as to be scarce eatable. The rest of the body, however, is very wholesome food. The Indians use the skins as blankets ; they also dispose of both the flesh and skins at the forts of the Europeans ; bringing them down every winter in considerable quantities. The hair is so amazingly fine, that stockings have been made of it finer than silk.

ARNEE

THIS is an Indian species, known chiefly from its vast horns, which are sometimes seen in museums, and from Indian paintings, in which it is occasionally represented.

In the work of Mr. Kerr, it is said to have been met with by a British officer in the woods above Bengal, and to have been about fourteen feet high, which is to be understood of the measure from the hoofs to the top of the horns. It is said to partake of the form of the horse, the bull, and the deer, and to be a very bold and daring animal. Mr. Kerr in his publication adds a figure of this species from an Indian painting. In this painting the animal appears, in proportion to the human figures standing near, to be at least eight feet high at the shoulders. It is of a black colour, quite smooth, and without either protuberance or mane. Horns of the animal exist in the British, and other museums.

CAPE BUFFALO.

THE savage disposition of this animal renders it well known about the Cape of Good Hope, and in the several other parts of Africa where it is found. It is very large and enormously strong. The fore parts of the body are covered with long, coarse, and black hair. The horns are thick, and rugged at the base, sometimes measuring three feet in length, and lying so flat as to cover almost all the top of the head. The ears are large and slouching. The body and limbs are very thick and muscular; and the animal is above eight feet long, and six in height. The head

hangs down, and bears a most fierce and malevolent aspect.

In the plains of Caffraria the buffaloes are so common that it is by no means unusual to see a hundred and fifty, or two hundred of them in a herd. They generally retire to the thickets and woods in the day time, and at night go out into the plains to graze.

Treacherous in the extreme, they frequently conceal themselves among the trees, and there stand lurking till some unfortunate passenger comes by, when the animal at once rushes out into the road, and attacks the traveller, who has no chance to escape but by climbing up a tree, if he is fortunate enough to be near one. Flight is of no avail, he is speedily overtaken by the furious beast, who, not contented with throwing him down and killing him, stands over him even for a long time afterwards, trampling him with his hoofs, and crushing him with his knees; and not only mangles and tears the body to pieces with his horns and teeth, but likewise strips off the skin, by licking it with his tongue. Nor does he perform all this at once, but often retires to some distance from the body, and returns with savage ferocity to gratify afresh his cruel inclination.

As Professor Thunberg was travelling in Caffraria, he and his companions had just entered a wood, when they discovered a large old male buffalo, lying quite alone, in a spot that, for the space of a few square yards, was free from bushes. The animal no sooner observed the guide, who went first, than, with a horrible roar, he rushed upon him. The fellow turned his horse short round behind a large tree, and the buffalo rushed straight forwards to the next man, and gored his horse so dreadfully in the belly that it died soon after. These two climbed into trees, and the fu-

rious animal made his way towards the rest, of whom the Professor was one, who were approaching, but at some distance. A horse without a rider was in the front ; as soon as the buffalo saw him he became more outrageous than before, and attacked him with such fury, that he not only drove his horns into the horse's breast, but even out again through the very saddle. This horse was thrown to the ground with such excessive violence, that he instantly died, and many of his bones were broken. Just at this moment the Professor happened to come up, but from the narrowness of the path having no room to turn round, he was glad to abandon his horse, and take refuge in a tolerably high tree. The buffalo, however, had finished ; for after the destruction of the second horse, he turned suddenly round, and galloped away.

Some time after this, the Professor and his party espied an extremely large herd of buffaloes grazing on a plain. Being now sufficiently apprized of the disposition of these animals, and knowing that they would not attack any person in the open plains, they approached within forty paces, and fired amongst them. The whole troop, notwithstanding the individual intrepidity of the animals, surprised by the sudden flash and report, turned about, and made off towards the woods. The wounded buffaloes separated from the rest of the herd from inability to keep pace with them. Amongst these was an old bull buffalo, which ran with fury towards the party. They knew that, from the situation of the eyes of these animals, they could see in scarcely any other direction than straight forward ; and that in an open plain, if a man that was pursued darted out of the course, and threw himself flat on the ground, they would gallop off to a considerable distance before they missed him. These

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circumstances prevented their suffering any material alarm. The animal, from this contrivance, passed close by them, and fell before he appeared to have discovered his error. Such, however, was his strength, that notwithstanding the ball had entered his chest, and penetrated through the greatest part of his body, he ran at full speed several hundred paces before he fell.

The Cape buffalo is frequently hunted, both by Europeans, and by the natives of South Africa. In Caffraria he is generally killed by means of javelins, which the inhabitants use with considerable dexterity. When a Caffre has discovered the place where several buffaloes are collected together, he blows a pipe, made of the thigh bone of a sheep, which is heard at a great distance. The moment his comrades hear this notice they run up to the spot, and surrounding the animals, which they take care to approach by degrees, lest they should alarm them, throw their javelins at them. This is generally done with so sure an aim that out of eight or twelve, it is very rarely that a single one escapes. It sometimes happens, however, that while the buffaloes are running off, some one of the hunters who stands in the way is tossed and killed; but this is a circumstance not much regarded by the Caffrarians. When the chase is ended, each one cuts off and takes away his share of the game.

Some Europeans at the Cape once chased a buffalo, and having driven him into a narrow place, he turned round, and instantly pushed at one of his pursuers, who had on a red waistcoat. The man, to save his life, ran to the water, plunged in, and swam off; the animal followed him so closely that the poor fellow had no alternative but that of diving. He dipped overhead, and the buffalo, losing sight of him, swam on towards the opposite

shore, three miles distant, and, as was supposed, would have reached it, had he not been shot by a gun from a ship lying at a little distance. The skin was presented to the governor of the Cape, who had it stuffed, and placed it among his collection of curiosities.

Like the hog, this animal is fond of wallowing in the mire. His flesh is lean, but juicy, and of a high flavour. The hide is so thick and tough, that targets, musket-proof, are formed of it; and even while the animal is alive, it is said to be in many parts impenetrable to a leaden musket-ball; balls hardened with a mixture of tin, are, therefore, always used, and even these are often flattened by the resistance. Of the skin, the strongest and best thongs for harness are made. The Hottentots, who never put themselves to any great trouble in dressing their victuals, cut the buffalo's flesh into slices, and then smoke, and at the same time half broil it, over a few coals. They also frequently eat it in a state of putrefaction. They dress the hides by stretching them on the ground with stakes, afterwards strewing them over with warm ashes, and then with a knife scraping off the hair.

HORSE TRIBE.

THE animals of this tribe perform various and essential services to mankind. All the species, except one, have single hoofs; this, however, which is an inhabitant of the mountains of South America, has divided hoofs, as in the several kinds of cattle.

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They all fight by biting, and kicking with their hind feet ; and they have the singular property of breathing only through their nostrils.

They are gregarious, and in a wild state inhabit the most retired deserts. Of the six species now known, only one has been discovered as a native of the new continent, the rest being confined to Africa and Asia.

The generic characters of the horse are six parallel front teeth in the upper, and six in the lower jaw, the latter somewhat projecting. There is also one canine tooth on each side, in both jaws, remote from the rest.

COMMON HORSE.

The horse is known among most nations in the world, in a domestic state. In gracefulness of form and dignity of carriage, he appears superior to every other quadruped. Among all the inferior animals, man has found no other servant equally manageable and useful with the horse. He is lively and high spirited, yet gentle and tractable ; vigorous and active ; keen and ardent in his exertions, yet firm and persevering. He seems equally qualified for all the different purposes for which man can employ his services ; he submits peaceably to the draught ; rejoices in the race ; in hunting, seems to catch the eagerness of his rider, and disdains every obstacle ; on the road, proceeds cheerfully, and seems to acquire for his master the attachment of a companion ; in war, he learns to perform every evolution with the utmost dexterity, and displays a degree of ardour for battle which the courage even of the bravest soldier cannot exceed. He is liable to several diseases, though not to such a variety as his master. To some of these he would, no doubt, be naturally subject in any state ; others

of them are occasioned by our wanton abuse of this noble animal ; and others, perhaps the greater number, he owes to our ill-directed fondness and care. He feeds upon grass and grain ; fights with his hoofs and teeth ; defends himself from flies with his tail. The skin of this animal is used for collars and harness, and other similar purposes ; and the hair for chair bottoms, floor cloths, and fishing lines. The flesh is eaten by some rude nations, among whom the animal abounds ; the milk of the mare is also drunk ; and the Kalmuks and Mongals prepare from it a spirit of considerable strength. The period of gestation is two hundred and ninety days. The mare suckles her foal with fondness, and defends it from injury. The young horse, or mare, does not acquire the canine teeth till the age of five years. The voice of this animal is peculiar ; we call it neighing. Horses are known to live, when their days are not shortened by ill usage, commonly to the age of five and twenty or thirty years ; and sometimes to forty or fifty : such as are remarkably large seldom live so long as those of a moderate size.

The horse, like the other tame animals, has, no doubt, been originally domesticated by human art. Wild horses are still found in various parts of the world. But this species of animals have been so long known in a domestic state, and their useful qualities have caused them to be diffused so generally over the globe, that it is impossible to discover, with any degree of certainty, of what country they were originally natives. Wild horses are found in the country lying around the lake Aral ; on the river Tom, in the southern part of Siberia ; in the great Mongolian deserts ; and among the Kalkas, north-west of China. These horses are smaller than the domestic ; their hair, particularly in winter, is very thick, and of a mouse

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colour. Their heads are larger, in proportion to their bodies, than those of the tame horses ; and their foreheads remarkably arched. They herd together in large companies, and often gather round the horses of the Mongals and Kalkas, while grazing in the fields, and carry them off among them. They are observed to be very watchful of their common safety. While the herd is feeding, one of their number is placed as sentinel on an eminence ; when danger of any kind approaches, he warns his fellows by neighing, and they all betake themselves to flight with the utmost velocity. Yet the Kalmuks frequently surprise them, ride in among the herds, on very fleet tame horses, and kill them with broad lances. Hawks are also used in taking the wild horses ; those birds are taught to fix on the forehead of the quadruped, where they tease and distress it in such a manner, as to prevent it from escaping its pursuer.

In the wilds of Africa too, the horse is said to be found in a state of nature. In the country adjoining to the Cape of Good Hope, numbers of wild horses are found. Their size is small, their dispositions vicious ; and no art, we are told, can succeed in taming them. The negroes kill them for eating.

In the deserts on each side of the river Don, particularly towards the Palus Mæotis and the town of Backmut, there are a race of wild horses, which are known to be the progeny of the Russian horses that were turned loose from the siege of Asoph in the year 1697, for want of forage. The Cossacks chase and kill these for their skins. When they happen to take a young one, it is domesticated by coupling it, for a few months, with a tame horse. These are much stronger than the tame horses of the country. The horses of the

Tartars copulate and breed with the wild horses, which carry them off : the offspring produced by this intermixture are distinguishable by their colours. In Spanish America, there are vast herds of wild horses. But they are known to have been originally introduced by the Spaniards, when they first conquered that country. Being suffered to run about in those extensive and unappropriated fields and forests, without restraint or culture, they have become strangers to man, and have multiplied so amazingly, that they are now spread over all the south of the American continent, nearly to the Straits of Magellan. The inhabitants of those regions are not without arts for taking them. When taken, they are easily tamed ; and though suffered to return to their former state of freedom, they never afterwards forget their masters. Ancient authors mention wild horses as inhabitants of many other countries. Herodotus speaks of a race of white wild horses that were found on the banks of the river Hypanis in Scythia, and mentions another tribe in the north of Thrace, whose hair was five inches long all over the body. Strabo speaks of wild horses on the Alps, and in Spain. Cardan, who visited Scotland in the minority of queen Mary, and had the honour of curing Hamilton, archbishop of St. Andrew's, of a dangerous disease, relates, that wild horses then abounded in his country, and in the Orkney isles. And, indeed, we are told, that in the Highlands of Scotland, many of that small breed of horses, known in the low countries by the name of shelties, still run about, almost wild, among the hills, in a state very little different from that of the wild horses in South America. It is worth notice, that the fabulous records in which the earlier history of ancient Greece is preserved, represent horses as having been first domesticated by the inhabitants of

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Thessaly, a country bordering on Thrace. The fable of the Centaurs is well known. From every fact that antient authors have preserved, or modern travellers relate concerning the horse in a wild state, this species of animals appear to have been destined by nature for inhabitants, not merely of one or two different tracts of country, but of a considerable part of the globe. An animal so useful and so friendly to man, is happily qualified to be his servant and companion in many varieties of climate, and through a great diversity of local circumstances.

But of all countries in the world, where the horse runs wild, Arabia produces the most beautiful breed, the most generous, swift, and persevering. They are said to be found, though not in great numbers, in the deserts of that country; and the natives use every stratagem to take them. Although they are active and beautiful, yet they are not so large as those that are bred up tame; they are of a brown colour, their mane and tail very short, and the hair black and tufted. Their swiftness is incredible; the attempt to pursue them in the usual manner of the chase, with dogs, would be entirely fruitless. Such is the rapidity of their flight, that they are instantly out of view, and the dogs themselves give up the vain pursuit. The only method, therefore, of taking them is by traps, hidden in the sand, which entangling their feet, the hunter at length comes up, and either kills them or carries them home alive. If the horse be young, he is considered among the Arabians as a very great delicacy; and they feast upon him while any part is found remaining; but if, from his shape or vigour, he promises to be serviceable in his more noble capacity, they take the usual methods of taming him,

by fatigue and hunger, and he soon becomes an useful domestic animal.

The usual manner of trying their swiftness, is by hunting the ostrich ; the horse is the only animal whose speed is comparable to that of this creature, which is found in the sandy plains, with which those countries abound. The instant the ostrich perceives itself aimed at, it makes to the mountains, while the horseman pursues with all the swiftness possible, and endeavours to cut off its retreat. The chase then continues along the plain, while the ostrich makes use of both legs and wings to assist its motion. However, a horse of the first speed is able to out-run it ; so that the poor animal is then obliged to have recourse to art to elude the hunter, by frequently turning : at length, finding all escape hopeless, it hides its head wherever it can, and suffers itself to be tamely taken. If the horse, in a trial of this kind, shows great speed, and is not readily tired, his price becomes proportionably great, and there are some horses valued at a thousand ducats.

But the horses thus caught, or trained in this manner, are at present but very few ; the value of Arabian horses, over all the world, has, in a great measure, thinned the deserts of the wild breed ; and there are very few to be found in those countries, except such as are tame. The Arabians, as we are told by historians, first began the management of horses in the time of Sheque Ismael. Before that, they wandered wild along the face of the country, neglected and useless ; but the native then first began to tame their fierceness, and to improve their beauty, ; so that at present they possess a race of the most beautiful horses in the world, with which they drive a trade, and furnished the stables of princes at immense prices.

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"There is scarce an Arabian," says Buffon, "how poor soever, but is provided with his horse. They, in general make use of mares in their ordinary excursions ; experience having taught them that they support fatigue, thirst, and hunger, better than the horses are found to do. They are also less vicious, of a gentler nature, and are not so apt to neigh. They are more harmless also among themselves, not so apt to kick or hurt each other, but remain whole days together without the least mischief. The Turks, on the contrary, are not fond of mares ; and the Arabians sell them such horses as they do not choose to keep for stallions at home. They preserve the pedigree of their horses with great care, and for several ages back. They know their alliances and all their genealogy ; they distinguish the races by different names, and divide them into three classes. The first is that of the nobles, the antient breed, and unadulterated on either side : the second is that of the antient race, but adulterated ; and the third is that of the common and inferior kind : the last they sell at a low price ; but those of the first class, and even of the second, amongst which are found horses of equal value to the former, are sold extremely dear. They know, by long experience, the race of a horse by his appearance ; they can tell the name, the surname, the colour, and the marks properly belonging to each. When they are not possessed of stallions of the noble race themselves, for their mares, they borrow from their neighbours, paying a proper price as with us, and receive a written attestation of the whole. In this attestation is contained the name of the horse and the mare, and their respective genealogies. When the mare has produced her foal, new witnesses are called, and a new attestation signed, in which are described the marks of the foal, and

the day noted when it was brought forth. These attestations increase the value of the horse ; and they are given to the person who buys him. The most ordinary mare of this race sells for five hundred crowns ; there are many that sell for a thousand ; and some of the very finest for fourteen or fifteen hundred pounds. As the Arabians have no other house but a tent to live in, this also serves them for a stable ; so that the mare, the foal, the husband, the wife, and the children, lie all together indiscriminately ; the little children are often seen upon the body or the neck of the mare, while these continue inoffensive and harmless, permitting them thus to play with and caress them without any injury. The Arabians never beat their horses ; they treat them gently ; they speak to them, and seem to hold a discourse ; they use them as friends ; they never attempt to increase their speed by the whip, nor spur them but in cases of necessity. However, when this happens, they set off with amazing swiftness ; they leap over obstacles with as much agility as a buck ; and, if the rider happens to fall, they are so manageable that they stand still in the midst of their most rapid career. The Arabian horses are of a middle size, easy in their motions, and rather inclined to leanness than fat. They are regularly dressed every morning and evening, and with such care, that not the smallest roughness is left upon their skins. They wash the legs, the mane, and the tail, which they never cut ; and which they seldom comb, lest they should thin the hair. They give them nothing to eat during the day ; they only give them to drink once or twice ; and at sun-set they hang a bag to their heads, in which there is about half a bushel of clean barley. They continue eating the whole night, and the bag is again taken away the next morning. They are turned out to pasture in the

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beginning of March, when the grass is pretty high, and at which time the mares are given to the stallion. When the spring is past, they take them again from pasture, and they get neither grass nor hay during the rest of the year; barley is their only food, except now and then a little straw. The mane of the foal is always clipped when about a year or eighteen months old, in order to make it stronger and thicker. They begin to break them at two years old, or two years and half at farthest; they never saddle or bridle them till at that age; and then they are always kept ready saddled at the door of the tent, from morning till sun-set, in order to be prepared against any surprise. They at present seem sensible of the great advantage their horses are to the country; there is a law, therefore, that prohibits the exportation of the mares, and such stallions as are brought into England are generally purchased on the eastern shores of Africa, and come round to us by the Cape of Good Hope. They are in general less in stature than our own, being not above fourteen, or fourteen hands and a half high; their motions are much more graceful and swifter than of our own horses; but, nevertheless, their speed is far from being equal; they run higher from the ground; their stroke is not so long and close; and they are far inferior in bottom. Still, however, they must be considered as the first and finest breed in the world; and that from which all others have derived their particular qualifications. It is even probable that Arabia is the original country of horses; since there, instead of crossing the breed, they take every precaution to keep it entire. In other countries they must continually change the races, or their horses would soon degenerate; but there the same blood has past down through a long

succession, without any diminution either of force or beauty."

The race of Arabian horses has spread itself into Barbary, among the Moors, and has even extended across that extensive continent to the western shores of Africa. Among the negroes of Gambia and Senegal, the chiefs of the country are possessed of horses; which, though little, are very beautiful, and extremely manageable. Instead of barley, they are fed in those countries with maize, bruised and reduced into meal, and mixed up with milk when they design to fatten them. These are considered as next to the Arabian horses, both for swiftness and beauty; but they are rather still smaller than the former. The Italians have a peculiar sport, in which horses of this breed run against each other. They have no riders, but saddles so formed as to flap against the horses' sides as they move, and thus to spur them forward. They are set to run in a kind of railed walk, about a mile long, out of which they never attempt to escape; but, when they once set forward, they never stop, although the walk from one end to the other is covered with a crowd of spectators, which opens and gives way as the horses approach. Our horses would scarcely, in this manner, face a crowd, and continue their speed, without a rider, through the midst of a multitude; and, indeed, it is a little surprising how in such a place, the horses find their own way. However, what our English horses may want in sagacity, they make up by their swiftness; and it has been found upon computation, that their speed is nearly one fourth greater, even carrying a rider, than that of the swiftest barb without one.

The Arabian breed has been diffused into Egypt as well as Barbary, and into Persia also; where,

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as we are told by Marcus Paulus, there are studs of ten thousand white mares all together, very fleet, and with the hoof so hard, that shoeing is unnecessary. In these countries, they in general give their horses the same treatment that they give in Arabia, except that they litter them upon a bed of their own dung, dried in the sun, and then reduced to powder. When this, which is spread under the horse about five inches thick, is moistened, they dry it again, and spread it as before. The horses of these countries a good deal resemble each other. They are usually of a slender make, their legs fine, bony, and far apart; a thin mane, a fine crest; a beautiful head: the ear small and well pointed; the shoulder thin; the side rounded, without any unsightly prominence; the croup is a little of the longest, and the tail is generally set high. The race of horses, however, is much degenerated in Numidia; the natives having been discouraged from keeping the breed up by the Turks, who seize upon all the good horses, without paying the owners the smallest gratuity for their care in bringing them up. The Tingitanians and Egyptians have now, therefore, the fame of rearing the finest horses, both for size and beauty. The smallest of these last are usually sixteen hands high; and all of them shaped, as they express it, with the elegance of an antelope.

Next to the barb, travellers generally rank the Spanish genette. These horses, like the former, are little, but extremely swift and beautiful. The head is something of the largest; the mane thick; the ears long, but well pointed; the eyes filled with fire; the shoulder thickish, and the breast full and large. The croup round and large: the legs beautiful, and without hair; the pastern a little of the longest, as in the barb, and the hoof rather too high. Nevertheless, they move

with great ease, and carry themselves extremely well. Their most usual colour is black, or a dark bay. They seldom or never have white legs, or white snip. The Spaniards, who have a groundless aversion to these marks, never breed from such as have them. They are all branded on the buttock with the owner's name; and those of the province of Andalusia pass for the best. These are said to possess courage, obedience, grace, and spirit, in a greater degree than even the barb; and, for this reason, they have been preferred as war-horses to those of any other country.

The Italian horses were once more beautiful than they are at present, for they have greatly neglected the breed. Nevertheless, there are still found some beautiful horses among them, particularly among the Neapolitans, who chiefly use them for the draught. In general, they have large heads and thick necks. They are also restive, and consequently unmanageable. These faults, however, are recompensed by the largeness of their size, by their spirit, and the beauty of their motion. They are excellent for show, and have a peculiar aptitude to prance.

The Danish horses are of such an excellent size, and so strong a make, that they are preferred to all others for the draught. There are some of them perfectly well shaped; but this is but seldom seen; for in general they are found to have a thick neck, heavy shoulders, long and hollow back, and a narrow croup: however, they all move well, and are found excellent both for parade and war. They are of all colours, and often of whimsical ones, some being streaked like the tiger, or mottled like the leopard.

The German horses are originally from Arabian and Barbary stocks; nevertheless, they appear to be small and ill shaped: it is said also, that they

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are weak and washy, with tender hoofs. The Hungarian horses, on the other hand, are excellent for the draught, as well as the saddle. The Hussars, who use them in war, usually slit their nostrils; which is done, as it is said, to prevent their neighing, but, perhaps, without any real foundation.

The Dutch breed is good for the draught, and is generally used for that purpose over Europe: the best come from the province of Friesland. The Flanders horses are much inferior to the former; they have most commonly large heads, flat feet, and swollen legs; which are an essential blemish in horses of this kind.

The French horses are of various kind; but they have few that are good. The best horses of that country come from Limosin; they have a strong resemblance to the barb, and, like them, are excellent for the chase; but they are slow in coming to perfection; they are to be carefully treated while young, and must not be backed till they are eight years old. Normandy furnishes the next best; which, though not so good for the chase, are yet better for war. In general, the French horses have the fault of being heavy shouldered, which is opposite to the fault of the barb, which is too thin in the shoulder, and is consequently, apt to be shoulder-slipt.

Having mentioned the horses most usually known in Europe, we pass on to those of more distant countries, of whose horses we can only judge by report. We mentioned the wild horses of America. Such as are tame, if we may credit the latest reports, are admirable. Great numbers of these are bred up to the chase, and are chiefly kept for this purpose, particularly at Quito. The hunters, as Ulloa informs us, are divided into two classes; one part on foot, the other on horseback: the

business of the footmen is to rouse the deer ; and that of the horsemen, to hunt it down. They all, at break of day, repair to the place appointed, which is generally on the summit of a hill, with every man his greyhound.* The horsemen place themselves on the highest peaks ; whilst those on foot range the precipices, making an hideous noise, in order to start the deer. Thus the company extend themselves three or four leagues, or more, according to their numbers. On starting any game, the horse which first perceives it sets off, and the rider, being unable to guide or stop him, pursues the chase, sometimes down such a steep slope, that a man on foot, with the greatest care could hardly keep his legs ; from thence he flies up a dangerous ascent ; or along the side of a mountain, so that a person, not used to this exercise, would think it much safer to throw himself out of the saddle, than commit his life to the precipitate ardour of his horse. The other horses which join in the chase, do not wait for the riders to animate them ; they set forward immediately upon seeing another at full speed ; and it becomes prudent in the rider to give them their way, and at the same time to let them feel the spur, to carry him over the precipices. These horses are backed and exercised to this method of hunting ; and their usual pace is trotting.

There are said to be very good horses in the islands of the Archipelago. Those of Crete were in great reputation among the ancients, for their swiftness and force ; however, at present they are but little used, even in the country itself, because of the unevenness of the ground, which is there very rocky and mountainous. The original horses of Morocco are much smaller than the Arabian breed ; however, they are very swift and vigorous. In Turkey there are to be found

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horses of almost all races : Arabians, Tartars, Hungarians, and those natural to the place. The latter are very beautiful and elegant ; they have a great deal of fire, swiftness, and management ; but they are not able to support fatigue ; they eat little ; they are easily heated ; and they have skins so sensible, that they can scarcely bear the rubbing of the stirrup. The Persian horses are, in general, the most beautiful and most valuable of all the East. The pastures in the plains of Media, Persepolis, Ardebil, and Derbent, are excellent for the purpose of rearing them ; and there were bred in those places vast numbers, by order of the government of Persia, while that country was under any government. Pietro della Valle prefers the horses of Persia to those of Italy ; and informs us, that they are in general of a middle size ; and although some are found even of the smallest stature, yet that does not impair their beauty or their strength ; yet, in some places, they are of a very good size, and as large as the English saddle horses are generally found to be : they have all a thin head, a fine crest, a narrow breast, small ears well placed, the legs fine, the hoof hard, and the croup beautiful ; they are docile, spirited, nimble, hardy, courageous, and capable of supporting a very great fatigue ; they run very swiftly, without being easily fatigued : they are strong and easy, being only supplied with barley and chopped straw ; they are put to grass only for six weeks in the spring ; they have always the tail at full length, and there is no such thing as geldings among the number ; they are defended from the air, as in England, by body-clothes ; they attend them with the most punctual exactness ; and they are rid generally in a snaffle, without spurs. Great numbers of these are every year transported into Turkey, but chiefly into the East Indies : however, after all, travellers

agree that they are not to be compared to the Arabian horses, either for courage, force, or beauty; and that the latter are eagerly sought, even in Persia.

The horses of India are of a very indifferent kind, being weak and washy. Those which are used by the grandees of the country, come from Persia and Arabia; they are fed with a small quantity of hay during the day; and at night they have boiled peas, mixed with sugar and butter, instead of oats or barley: this nourishment supports them, and gives them strength; otherwise, they would soon sink and degenerate. Those naturally belonging to the country, are very small and vicious. Some are so very little, that Taverner reports, that the young Mogul prince, at the age of seven or eight, rode one of those little horses, that was not much larger than a greyhound; and some years since, one of these was brought over into this country, as a present to the queen, that measured no more than nine hands high; and was not much larger than a common mastiff. It would seem, that climates excessively hot, are unfavourable to this animal. In this manner, the horses of the Gold-coast, and of Guinea, are extremely little, but very manageable. It is a common exercise with the grandees of that country, who are excellent horsemen, to dart out their lances before them upon full gallop, and to catch them again before they come to the ground. They have a sport also on horse-back, that requires great dexterity in the rider, and a great share of activity in the horse: they strike off a ball, with a battle-dore, while they are upon a full gallop, and pursuing it, strike it again before it comes to the ground; and this they continue for a mile together, striking sometimes to the right, and sometimes to the left, with amazing speed and agility.

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The horses of China are as indifferent as those of India: they are weak, little, ill-shaped, and cowardly. Those of Corea are not above three feet high; almost all the breed there are made geldings, and are so timorous, that they can be rendered no way serviceable in war; so that it may be said, that the Tartar horses were properly the conquerors of China. These, indeed, are very serviceable in war; and although but of a middling size, yet they are surprisingly patient, vigorous, swift, and bold; their hoofs are extremely hard, though rather too narrow; their heads are fine, but rather too little; the neck is long and stiff; the legs of the longest; and yet, with all these faults, they are found to be an excellent breed. The Tartars live with their horses pretty much in the same manner as the Arabians do; they begin to back them at the age of seven or eight months, placing their children upon them, who manage them even at that early age. By these means they break them by little and little, till at last, about the age of six or seven years, they are capable of enduring amazing hardships. Thus they have been known to march two or three days without once stopping; to continue five or six without eating any thing except a handful of grass at every eight hours; and, besides, to remain without drinking for four and twenty hours. These horses, which are so vigorous in their own country, lose all their strength when they are brought into China or the Indies; but they thrive pretty well in Persia and Turkey. The race of little Tartars, towards the north, have also a breed of little horses, which they set such a value upon, that it is forbidden to sell them to strangers: these horses have the very same qualities with those of the larger kind; which they probably derive from a similar treatment. There are also very fine horses in Cit-

cassia and Mingrelia. There are some greatly esteemed in the Ukraine, in Walachia, Poland, and Sweden ; but we have no particular accounts of their excellencies or defects.

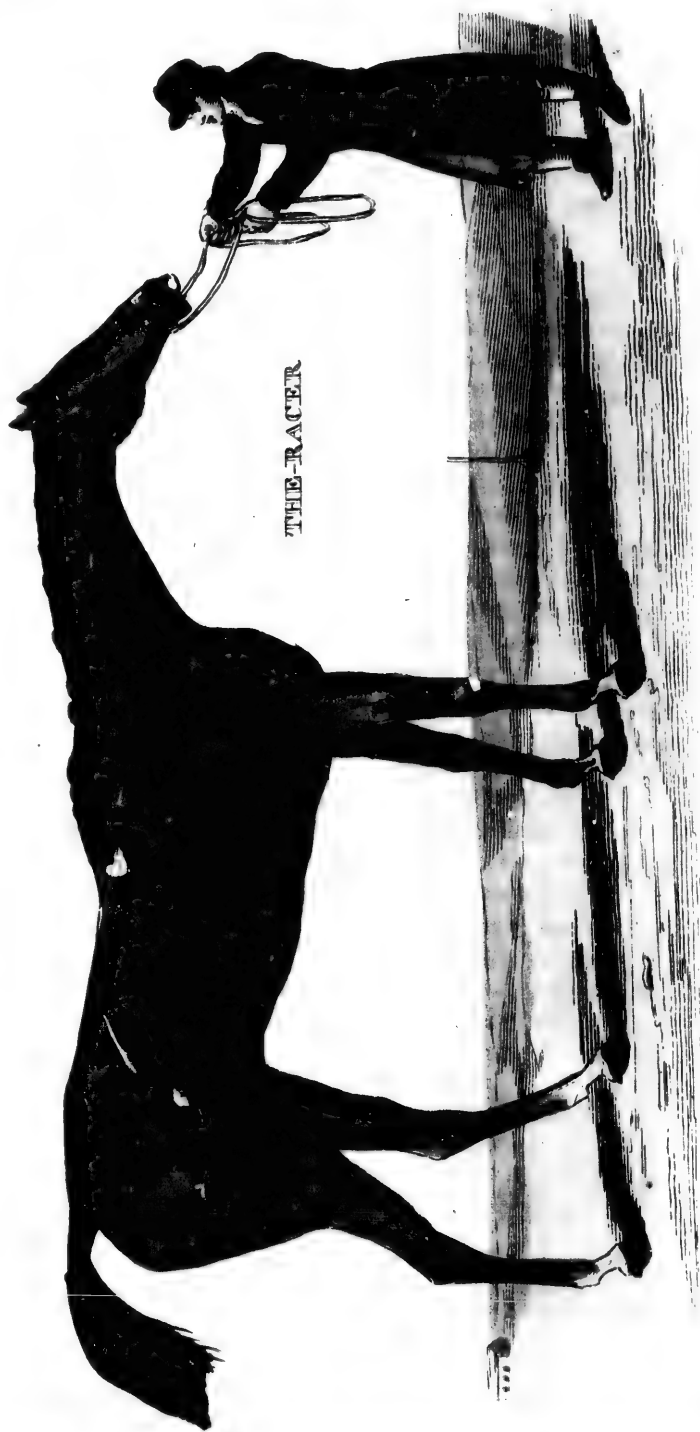
In Norway, where the roads are most of them impassable for carriages, the horses, which are nearly all stallions, are remarkably sure-footed, they skip along over the stones, and are always full of spirit. Pontoppidan says, when they go up and down a steep cliff, on stones like steps, they first gently tread with one foot, to try if the stone be firm ; and in this they must be left entirely to their own management, or the best rider in the world would run the risk of breaking his neck. When they have to descend steep and slippery places, and such frequently occur, they, in a surprising manner, like the asses of the Alps, draw their hind legs together under their bodies, and thus slide down. They exhibit much courage when they contend, as they are often under the necessity of doing, with the wolves and bears, but particularly with the latter. When the horse perceives any of these animals near him, and has a mare or gelding with him, he first puts these behind out of the way, and then furiously attacks his enemy with his fore legs, which he uses so expertly as generally to come off the conqueror. Sometimes, however, the bear, who has twice the strength of his adversary, gets the advantage, particularly if the horse makes an attempt, by turning round, to kick him with his hind legs ; for the bear then instantly closes upon him, and keeps such firm hold, as scarcely by any means whatever to be shaken off : the horse in this case gallops away with his enemy, till he falls down and expires from loss of blood.

There are few countries that can boast a breed of horses so excellent as our own. The English

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hunters are allowed to be among the noblest, most elegant, and useful animals in the world. Whilst the French, and many other European nations, seem only attentive to spirit and parade, we train ours principally for strength and dispatch. Theirs, however, have the advantage of never coming down before, as ours do, because, in breaking, they put them more on their haunches, while we, perhaps, throw them too much forward. With unwearied attention, however, to the breed, and repeated trials of all the best horses in different parts of the world, ours are now become capable of performing what no others can. Among our racers we have had one (Childers) which has been known to pass over eighty-two feet and a half in a second of time, a degree of fleetness perhaps unequalled by any other horse. In the year 1745, the postmaster of Stretton rode, on different horses, along the road to and from London, no less than two hundred and fifteen miles in eleven hours and a half, a rate of above eighteen miles an hour. And in July, 1788, a horse belonging to a gentleman of Billiter-square, London, was trotted for a wager, thirty miles in an hour and twenty-five minutes, which is at the rate of more than twenty-one miles an hour. In London, there have been instances of a single horse drawing, for a short space, the weight of three tons; and some of the pack horses of the north, usually carry burdens weighing upwards of four hundred pounds; but the most remarkable proof of the strength of the British horses, is in our mill-horses, some of which have been known to carry, at one load, thirteen measures of corn, that in the whole would amount to more than nine hundred pounds in weight.

Though endowed with vast strength, and great powers of body, such is the disposition of the horse, that it rarely exerts either to its master's

prejudice: on the contrary, it will endure fatigues, even to death, for our benefit. Providence seems to have implanted in him a benevolent disposition, and a fear of the human race, with, at the same time, a certain consciousness of the services we can render him. We have, however, one instance of recollection of injury, and an attempt to revenge it. This is inserted in a work of D. Rolle, Esq. of Torrington, in Devonshire:—A Baronet, one of whose hunters had never tired in the longest chase, once encouraged the cruel thought of attempting completely to fatigue him. After a long chase, therefore, he dined, and again mounting, rode him furiously among the hills. When brought to the stable, his strength appeared exhausted, and he was scarcely able to walk. The groom, possessed of more feeling than his brutal master, could not refrain from tears, at the sight of so noble an animal thus sunk down. The Baronet, some time after, entered the stable, and the horse made a furious spring upon him, and had not the groom interfered, would soon have put it out of his power ever again to misuse his animals.

The barbarous custom of docking the tails, and cutting the ears of horses, is in this country very prevalent. The former, principally with waggon horses, under the pretence that a bushy tail collects the dirt of the roads; and the latter, from the idea that they are rendered more elegant in their appearance. Thus, from ideal necessity, we deprive them of two parts of their body principally instrumental, not only to their own ease and comfort, but in their utility to us. By taking away their ears, the funnels are destroyed which they always direct to the place from whence any sound is heard, and they are thus rendered nearly deaf. And in the loss of their tail, they find even a still greater inconvenience. During summer,

they are perpetually teased with swarms of insects, that either attempt to suck their blood, or to deposit their eggs in the rectum, which they have now no means of lashing off; and in winter they are deprived of a necessary protection against the cold.

But of all others, the custom that we have adopted, for it is found in no other nation than his, of nicking them, is the most useless and absurd. It is an affecting sight to go into the stable of some eminent horse-dealer, and there behold a range of fine and beautiful steeds with their tails cut and slashed, tied up by pulleys to give them force, suffering such torture that they sometimes never recover the savage gashes they have received; and for what is all this done?—that they may hold their tails somewhat higher than they otherwise would, and be for ever after deprived of the power of moving the joints of them as a defence against flies!

In the history of the Academy of Sciences at Paris, a mode is laid down by which horses may at any time be stopped, when they become so unruly as to run away. This is founded on the principle of their always standing still when suddenly deprived of sight. M. Dalesme has there shewn a very easy manner of disposing two lines, which let fall at once upon the eyes of each of two coach horses a piece of leather, so as immediately to hinder them from seeing. These cords may be pulled from within the carriage. This appears capable of being improved into an useful preventive to the fatal accidents which sometimes occur from unruly or highly fed horses.

WILD MULE.

In its size and general appearance, this animal nearly resembles the common mule, the progeny of the horse and the ass. Its head is rather large in proportion to the body; its forehead is flat, and becomes narrower towards the extremity of the nose. Its ears are considerably longer than those of the horse; they stand erect; and are lined with a thick coat of whitish curling hair. In both jaws it has only thirty-eight teeth; whereas the common horse is possessed of forty. Its neck is slender and firm, not loose and soft. The breast swells forward, and is sharp. The limbs are long and finely shaped; the thighs thin like the common mule's. There is an oval callus within the fore legs; but none on the hinder legs. The hoofs are oblong, smooth, and black. The tail resembles that of a cow; it is slender; for one half of its length bare and covered on the other with long ash-coloured hairs.

This animal changes its coat with the season. In winter, its hair is about two inches long, soft, like that of a camel, waved on the back, and, on the superficies, of a grey-colour, but under that of a brownish ash-colour. In summer, the hair is much shorter, beautifully smooth, and marked all over the body with beautiful round spots. The extremity of the nose is, at this time, white; and from that part, up the front, the colour is nearly tawny. The buttocks, the inside of the limbs, and the under part of the belly, are white. A blackish line extends from the mane, along the ridge of the back, to the tail: this line becomes broader upon the loins, and narrower again as it approaches the tail. The upper part of the body is now of a light yellowish grey colour,—paler towards the sides

The body of this animal, between the tip of the nose and the base of the tail, is six feet and a half long ; the trunk of the tail measures one foot four inches ; the hairs depend about eight inches beyond the extremity of the trunk. The height of the animal is about three feet nine inches.

The wild mule, the Hemionos, or half-ass of Aristotle, is mentioned by that philosopher to have been found, in antient times, in Syria. Pliny informs us, on the authority of Theophrastus, that it was then found likewise in Capadocia. This animal is no longer found in these countries ; but it is now known for an inhabitant of the deserts between the rivers Onow and Argun, in the most southern parts of Siberia : of the extensive plains and deserts of western Tartary, and of the celebrated sandy desert of Gobi, which reaches to India.

These animals shun tracts of wood, and lofty, snowy mountains. They are not numerous in Siberia : those which are there met with seem to be only stragglers, that have originally wandered from the large herds which are found to the south of the Russian dominions. In Tartary, they frequent chiefly the country lying around the lake Taric-poor ; a salt lake, which becomes sometimes dry.

They live in separate parties, each of which, consisting of mares and colts, with an old male at their head, is seldom above twenty, and frequently under that number. The period of their copulation is about the middle or end of August. They produce only one foal at a time ; at least, the instances in which a female has more, are very rare. In its third year, the animal attains its full growth, with the due proportions of form, and the colours which distinguish it during the rest of life. When the young have reached this age, the elder mules expel them from their society, and they associate

with new parties of their own age. The wild mules usually carry their heads drooping, and on a level with their bodies ; but in running they raise the head and erect the tail. They neigh in a deeper tone, and with a louder voice than the horse.

ASS.

THE horse and the ass, though nearly approaching in form, are of two distinct kinds, different in their natures, and were there but one of each kind, both races would probably be extinguished. Their shapes and their habits may, indeed, be very nearly alike ; but there is something in every animal, besides its conformation or way of life, that determines its specific nature. Thus there is much greater resemblance between the horse and the ass, than between the sheep and the goat ; and yet the latter produces an animal that is by no means barren, but which quickly reproduces an offspring resembling the sheep ; while the mule of the former is marked with almost certain sterility. The goat and the sheep may be therefore said to be of one kind, although so much unlike in figure ; while the horse and the ass are perfectly distinct, though so closely resembling.

The wild ass has, by some writers, been confounded with the zebra, but very improperly, for they are of a very different species. The wild ass is not streaked like the zebra, nor is his shape so beautiful ; his figure is pretty much the same as that of the common ass, except that he is of a brighter colour, and has a white list running from his head to his tail. This animal is found wild in many islands of the Archipelago, particularly in that of Cerigo. There are many wild asses in the deserts of Lybia and Numidia, that run



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with such amazing swiftness, that scarce even the coursers of the country can overtake them. When they see a man, they set up a horrid braying, and stop short all together, till he approaches near them; they then, as if by common consent, fly off with great speed; and it is upon such occasions that they generally fall into the traps which are previously prepared to catch them. The natives take them chiefly upon the account of their flesh, which they esteem as delicious eating; and for their skins, of which that kind of leather is made which is called shagreen.

Olearius relates, that the monarch of Persia invited him on a certain day, to be present at an entertainment of a very peculiar nature, which was exhibited in a small building near the palace, resembling a theatre. After a collation of fruits and sweetmeats, more than thirty of these wild asses were driven into the arena, among which the monarch discharged several shot, and some arrows, and in which he was imitated by some of the rest of his attendants. The asses finding themselves wounded, and no way of escaping, instantly began to attack each other, biting with great fierceness, and braying terribly. In this manner they continued their mutual animosity, while the arrows were poured in from above, until they were all killed; upon which they were ordered to be taken and sent to the king's kitchen at Ispahan. The Persians esteem the flesh of this animal so highly, that its delicacy is even become a proverb among them. What may be the taste of the wild ass's flesh we are unable to say; but certain it is, that the flesh of the tame ass is the worst that can be obtained, being drier, more tough, and more disagreeable than horse flesh. Galen even says, that it is very unwholesome. Yet we should not judge hastily upon the different tastes of different people,

in the preference they give to certain meats. The climate produces very great changes in the tenderness and the savour of several vianda; that beef, for instance, which is so juicy and good in England, is extremely tough and dry when killed under the line; on the contrary, that pork, which is with us so unpalatable in summer, in the warmer latitudes, where it is always hotter than here, is the finest eating they have, and much preferable to any hog's flesh in Europe.

The ass, like the horse, was originally imported into America by the Spaniards, and afterwards by other nations. That country seems to have been peculiarly favourable to this race of animals; and where they have run wild, they have multiplied in such numbers, that in some places they are become a nuisance. In the kingdom of Quito, the owners of the grounds where they are bred, suffer all persons to take away as many as they can, on paying a small acknowledgment, in proportion to the number of days their sport lasts. They catch them in the following manner. A number of persons go on horseback, and are attended by Indians on foot: when arrived at the proper places, they form a circle in order to drive them into some valley; where, at full speed, they throw the noose and endeavour to halter them. Those creatures, finding themselves enclosed, make very furious efforts to escape; and, if only one forces his way through, they all follow with an irresistible impetuosity. However, when noosed, the hunters throw them down, and secure them with fetters, and thus leave them till the chase is over. Then, in order to bring them away with greater facility, they pair them with tame beasts of the same kind; but this is not easily performed, for they are so remarkably fierce, that they often hurt the persons who undertake to manage them.

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They have all the swiftness of horses, and neither declivities nor precipices can retard their career. When attacked, they defend themselves with their heels and mouth with such activity, that, without slackening their pace, they often maim their pursuers. But the most remarkable property in these creatures is, that after carrying their first load, their celerity leaves them, their dangerous ferocity is lost, and they soon contract the stupid look and dulness peculiar to the asinine species. It is also observable, that these creatures will not permit a horse to live among them. They always feed together ; and, if a horse happens to stray into the place where they graze, they all fall upon him ; and, without giving him the liberty of flying, they bite and kick him till they leave him dead upon the spot.

Such is this animal in its natural state, swift, fierce, and formidable ; but, in this state of tameness, the ass presents a very different picture ; the moment his native liberty is repressed, he seems entirely to give up all claims to freedom ; and he assumes a patience and submission even humbler than his situation. He is, in a state of tameness, the most gentle and quiet of all animals. He suffers with constancy, and, perhaps, with courage, all the ill-treatment that cruelty and caprice are pleased to inflict. He is temperate with regard to the quantity and the quality of his provision. He is contented with the most neglected weeds ; and makes his humble repast upon what the horse and other animals leave behind. If he gives the preference to any vegetable, it is to the plantain ; for which he is often seen to neglect every other herb in the pasture : but he is chiefly delicate with respect to his water ; he drinks only at the clearest brooks, and chiefly those to which he has been accustomed. He drinks as soberly as he eats ;

and never, like the horse, dips his nose into the stream. As he is seldom saddled, he frequently rolls himself upon the grass ; and lies down, for this purpose, as often as he has an opportunity, without minding what becomes of his burden. He never rolls, like the horse, in the mud ; he even fears to wet his feet ; and turns out of his way to avoid the dirty parts of a road.

When very young, the ass is sprightly, and tolerably handsome ; but he soon loses these qualifications, either by age or bad treatment, and he becomes slow, stupid, and headstrong. He seems to show no ardour, except for the female, having been often known to die after the covering. The she-ass is very fond of her young ; and we are assured that she will cross fire and water to protect and rejoice in it. This animal is sometimes not less attached to his owner ; by whom he is too often abused. He scents him at a distance, and distinguishes him from others in a crowd ; he knows the ways he has passed, and the places where he inhabits.

When over-loaded, the ass shows the injustice of his master, by hanging down his head and lowering his ears ; when he is too hard pressed, he opens his mouth and draws back his lips in a very disagreeable manner. If his eyes are covered, he will not stir a step ; and, if he is laid down in such a manner, that one eye is covered with the grass, while the other is hidden with a stone, or whatever is next at hand, he will continue fixed in the same situation, and will not so much as attempt to rise to free himself from those slight impediments. He walks, trots, and gallops like a horse ; but, although he sets out very freely at first, yet he is soon tired ; and then no beating will make him mend his pace. It is in vain that his unmerciful rider exerts his whip or his cudgel ; the

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poor little animal bears it all with patience, and without a groan ; and, conscious of his own imbecility, does not offer even to move.

Notwithstanding the stupid heaviness of his air, he may be educated with as much ease as any other animal ; and several have been brought up to perform, and exhibited as a show. In general, however, the poor animal is entirely neglected. Man despises this humble useful creature, whose efforts are exerted to please him, and whose services are too cheaply purchased. The horse is the only favourite, and upon him alone all expense and labour are bestowed. He is fed, attended, and stabled, while the ass is abandoned to the cruelty of the lowest rustics, or even to the sport of children, and, instead of gaining by the lessons he receives, is always over. He is conducted along by blows ; he is scourged by unnecessary stripes ; he is overloaded by the lazy ; and, being generally the property of the poor, he shares with them in their wants, and their distresses. Thus this faithful animal, which, were there no horses, would be the first of the quadruped kind in our esteem, is now considered as nothing ; his properties and qualifications being found in a higher degree elsewhere, he is entirely disregarded ; and, from being the second, he is degraded into one of the most useless of the domestic quadrupeds.

For this reason, very little care has been taken to improve the breed ; it is suffered to degenerate ; and it is probable, that of all other animals this alone is rendered feebler and more diminutive, by being in a state of domestic servitude. The horse, the cow, and the sheep, are rendered larger by the assiduity of man ; the ass is suffered to dwindle every generation, and particularly in England, where, some have asserted, it is probable that, but for the medicinal qualities of its milk, the whole

species would have ere now been extinguished. Nevertheless, we have good reasons to believe that, were the same care bestowed on the ass that is spent upon the horse, were the same industry used in crossing the breed and improving it, we should see the ass become, from his present mean state, a very portly and serviceable animal; we should find him rival the horse in some of his perfections, and exceed him in others. The ass, bulk for bulk, is stronger than the horse; is more sure-footed; and, though more slow in his motions, he is much less apt to start out of the way.

An old man, who a few years ago sold vegetables in London, used in his employment an ass, which conveyed his baskets from door to door. Frequently he gave the poor industrious creature a handful of hay, or some pieces of bread, or greens, by way of refreshment and reward. The old man had no need of any goad for the animal, and seldom indeed, had he to lift up his hand to drive it on. His kind treatment was one day remarked to him, and he was asked whether his beast was apt to be stubborn. "Ah! Master," he replied, "it is of no use to be cruel, and as for stubbornness I cannot complain, for he is ready to do any thing, and to go any where. I bred him myself. He is sometimes skittish and playful, and once run away from me; you will hardly believe it, but there were more than fifty people after him, attempting in vain to stop him; yet he turned back of himself, and never stopped till he ran his head kindly into my bosom."

The Spaniards, of all people in Europe, seem alone to be acquainted with the value of the ass. They take all proper precautions to improve the breed; and Goldsmith saw a jack-ass, from that country, above fifteen hands high. This animal, however, seems originally a native of Arabia. A

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warm climate is known to produce the largest and the best; their size and spirit decline in proportion as they advance into colder regions.

Though now so common in all parts of England, the ass was entirely lost amongst us during the reign of queen Elizabeth. Holingshed informs us that our land did yield no asses. However, there are accounts of their being common in England before that time. In Sweden, they are at present a sort of rarity; nor does it appear by the last history of Norway, that they have yet reached that country. It is in the hotter climates alone that we are to look for the original of this serviceable creature. In Guinea, they are larger and more beautiful than even the horses of the same country. In Persia they have two kinds; one of which is used for burdens, being slow and heavy; the other, which is kept for the saddle, being smooth, stately, and nimble. They are managed as horses; only that the rider sits nearer the crupper, and they are taught to amble like them. They generally cleave their nostrils to give them more room for breathing, and many of these are sold for forty or fifty pounds.

The ass is a much more hardy animal than the horse, and liable to fewer diseases. Of all animals covered with hair, he is the least subject to vermin, for he has no lice, probably owing to the dryness and hardness of his skin. Like the horse, he is three or four years in coming to perfection; he lives till twenty or twenty-five; sleeps much less than the horse; and never lies down for that purpose, unless very much tired. The she-ass goes above eleven months with young, and never brings forth more than one at a time. The mule may be engendered either between a horse and a she-ass, or between a jack-ass and a mare. The latter breed is every way preferable, being larger, stronger,

and better shaped. It is not yet well known whether the animal called the Gimerro be one of these kinds ; or, as is asserted, bred between the ass and the bull. While naturalists affirm the impossibility of this mixture, the natives of the Alpine countries, where this animal is bred, as strongly insist upon its reality. The common mule is very healthy, and will live above thirty years, being found very serviceable in carrying burdens, particularly in mountainous and stony places, where horses are not so sure-footed. The size and strength of our asses is at present greatly improved by the importation of Spanish jack-asses ; and it is probable we may come in time, to equal the Spaniards in breeding them, where it is not uncommon to give fifty or sixty guineas for a mule ; and, indeed, in some mountainous countries, the inhabitants cannot well do without them. Their manner of going down the precipices of the Alps, or the Audes, is very extraordinary ; and with it we will conclude their history. In these passages, on one side are steep eminences, and on the other frightful abysses ; and, as they generally follow the direction of the mountain, the road, instead of lying in a level, forms at every little distance steep declivities, of several hundred yards downward. These can only be descended by mules ; and the animal itself seems sensible of the danger, and the caution that is to be used in such descents. When they come to the edge of one of these descents, they stop, without being checked by the rider ; and if he inadvertently attempt to spur them on, they continue immovable. They seem all this time ruminating on the danger that lies before them, and preparing themselves for the encounter. They not only attentively view the road, but tremble and snort at the danger. Having prepared for the descent, they place their fore feet

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in posture as if they were stopping themselves ; they then also put their hinder feet together, but a little forward, as if they were going to lie down. In this attitude, having taken as it were a survey of the road, they slide down with the swiftness of a meteor. In the mean time, all the rider has to do is to keep himself fast on the saddle, without checking the rein, for the least motion is sufficient to disorder the equilibrium of the mule ; in which case, they both unavoidably perish. But their address, in this rapid descent, is truly wonderful ; for, in their swiftest motion, when they seem to have lost all government of themselves, they follow exactly the different windings of the road, as if they had previously settled in their minds the route they were to follow, and taken every precaution for their safety. In this journey, the natives, who are placed along the sides of the mountains, and hold by the roots of the trees, animate the beast with shouts, and encourage him to perseverance. Some mules, after being long used to these journeys, acquire a kind of reputation for their safety and skill ; and their value rises in proportion to their fame.

ZEBRA.

THERE are three animals of the horse kind which have been more observed than any other. The horse, which is one of the most stately and courageous ; the ass, which is one of the most patient and humble ; and the zebra, which is one of the most beautiful, but at the same time one of the wildest animals in nature. Nothing can exceed the delicate regularity of this creature's colour, or the lustrous smoothness of its skin ; but, on the other hand, nothing can be more timid or more untameable.

It is chiefly a native of the southern parts of Africa ; and there are whole herds of them often seen feeding in those extensive plains that lie towards the Cape of Good Hope. However, their watchfulness is such, that they will suffer nothing to come near them, and their swiftness so great that they readily leave every pursuer far behind. The zebra, in shape, rather resembles the mule, than the horse or the ass. It is rather less than the former, and yet larger than the latter. Its ears are not so long as those of the ass, and yet not so small as in the horse kind. Like the ass, its head is large, its back straight, its legs finely placed, and its tail tufted at the end ; like the horse, its skin is smooth and close, and its hind quarters round and fleshy. But its greatest beauty lies in the amazing regularity and elegance of its colours. In the male, they are white and brown ; in the female, white and black. These colours are disposed in alternate stripes over the whole body, and with such exactness and symmetry, that one would think nature had employed the rule and compass to paint them. These stripes, which, like so many ribbands, are laid all over its body, are narrow, parallel, and exactly separated from each other. It is not here, as in other party-coloured animals, where the tints are blended into each other ; every stripe here is perfectly distinct, and preserves its colour round the body, or the limb, without any diminution. In this manner are the head, the body, the thighs, the legs, and even the tail and the ears beautifully streaked, so that at a little distance, one would be apt to suppose that the animal was dressed out by art, and not thus admirably adorned by nature.

In the male zebra, the head is striped with fine bands of black and white, which in a manner centre in the forehead. The ears are variegated with

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a white and dusky brown. The neck has broad stripes of the same dark brown running round it, leaving narrow white stripes between. The body is striped also across the back with broad bands, leaving narrower spaces of white between them, and ending in points at the sides of the belly, which is white, except a black line pectinated on each side, reaching from between the fore legs, along the middle of the belly, two thirds of its length. There is a line of separation between the trunk of the body, and the hinder quarters, on each side; behind which, on the rump, is a plat of narrow stripes, joined together, by a stripe down the middle, to the end of the tail. The colours are different in the female; and in none the stripes seem entirely to agree in form, but in all they are equally distinct; the hair equally smooth and fine; the white shining and unmixed; and the black, or brown, thick and lustrous.

Such is the beauty of this creature, that it seems by nature fitted to satisfy the pride and the pleasure of man: and formed to be taken into his service. Hitherto, however, it appears to have disdained servitude, and neither force nor kindness have been able in any considerable instance to wean it from its native independence, and ferocity. But this wildness might, perhaps, in time, be surmounted; and, it is probable, the horse and the ass, when first taken from the forest, were equally obstinate, fierce, and unmanageable. M. Buffon informs us, that the zebra, from which he took his description, could never be entirely mastered, notwithstanding all the efforts which were tried to tame it. They continued, indeed, to mount it, but then with such precautions as evidently showed its fierceness, for two men were obliged to hold the reins while the third ventured upon its back; and even then it attempted to kick whenever it

perceived any person approaching. That which was kept in the queen's manerie, at Buckingham Gate, was even more vicious than the former; and the keeper who shewed it, took care to inform the spectators of its ungovernable nature. Upon Goldsmith's attempting to approach, it seemed quite terrified, and was preparing to kick, appearing as wild as if just caught, although taken extremely young, and used with the utmost indulgence. Yet still it is most probable that this animal, by time and assiduity, could be brought under subjection. As it resembles the horse in form, without all doubt it has a similitude of nature, and only requires the efforts of an industrious and skilful nation, to be added to the number of our domestics. It is not now known, what were the pains and dangers which were first undergone to reclaim the breed of horses from savage ferocity; these, no doubt, made an equal opposition; but, by being opposed by an industrious and enterprising race of mankind, their spirit was at last subdued, and their freedom restrained. It is otherwise with regard to the zebra; it is the native of countries where the human inhabitants are but little raised above the quadruped. The natives of Angola, or Caffraria, have no other idea of advantage from horses but as they are good for food; neither the fine stature of the Arabian courser, nor the delicate colourings of the zebra, have any allurements to a race of people who only consider the quantity of flesh, and not its conformation. The delicacy of the zebra's shape, or the painted elegance of its form, are no more regarded by such, than by the lion that makes it his prey. For this reason, therefore, the zebra may hitherto have continued wild, because it is the native of a country where there have been no successive efforts made to reclaim it. All pursuits that have been

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hitherto instituted against it, were rather against its life than its liberty; the animal has thus been long taught to consider man as its most mortal enemy; and it is not to be wondered that it refuses to yield obedience where it has so seldom experienced mercy.

It is very likely, therefore, as a more civilized people are now placed at the cape of Good Hope, which is the chief place where this animal is found, that we may have them tamed and rendered serviceable. Nor is this extraordinary beauty the only motive we have for wishing this animal among the number of our dependents: its swiftness is said to surpass that of all others; so that the speed of a zebra is become a proverb among the Spaniards and Portuguese. It stands better upon its legs also than the horse; and is consequently stronger in proportion. Thus, if by proper care, we improved the breed, as we have in other instances, we should probably, in time to come, have a race as large as the horse, as fleet, as strong, and much more beautiful.

A beautiful male zebra, at Exeter Change, London, appeared to have entirely lost his native wildness, and was so gentle as to suffer a child of six years old to sit quietly on his back, without exhibiting the least signs of displeasure. He was familiar even with strangers, and received those kind of caresses that are usually given to the horse, with evident satisfaction.

This animal, which is neither to be found in Europe, Asia, or America, is nevertheless very easily fed. One which came over into England some years ago, would eat almost any thing, such as bread, meat, and tobacco; another subsisted entirely upon hay. As it so nearly resembles the horse and the ass in structure, so it probably brings forth annually as they do. The noise they make is neither

like that of a horse nor an ass, but more resembling the confused barking of a mastiff dog. In the two which Goldsmith saw, there was a circumstance that seems to have escaped naturalists ; which is, that the skin hangs loose below the jaw upon the neck, in a kind of dewlap, which takes away much from the general beauty. But whether this be a natural or accidental blemish, he would not take upon him to determine.

These animals are often sent as presents to the princes of the east. We are told, that one of the governors of Batavia gave a zebra, which had been sent to him from Africa, to the emperor of Japan, for which he received, as an equivalent for the company, a present to the value of sixty thousand crowns. Teller also relates, that the Great Mogul gave two thousand ducats for one of them. And it is frequent with the African ambassadors to the court of Constantinople, to bring some of these animals with them, as presents for the Grand Signior.

In some parts about the Cape of Good Hope, there are many zebras ; and a penalty of fifty rix-dollars is inflicted on any person who shoots one of them. Whenever any of them happen to be caught alive, they are ordered to be sent to the governor.

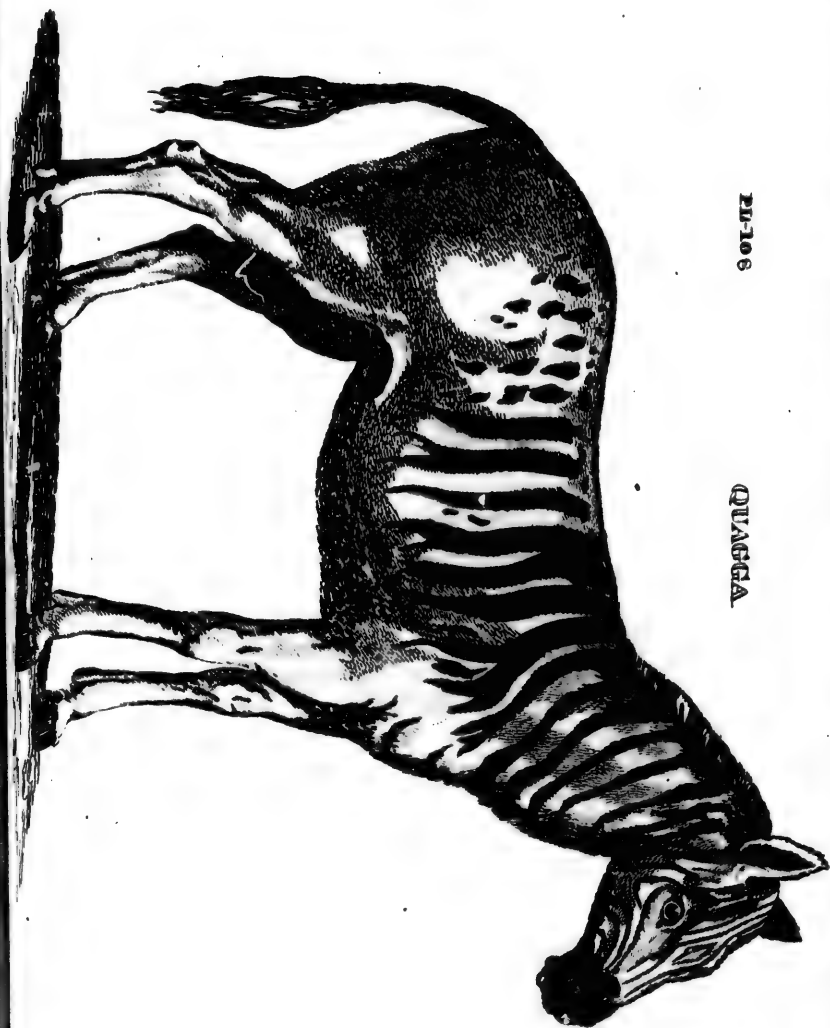
QUAGGA.

THE quagga nearly resembles the zebra. It is of the same size ; but its ears are shorter than that animal's ; and it has no stripes on its fore legs, loins, or hinder parts. The flanks are spotted ; the rump uniformly coloured ; and the belly, legs, and thighs are of a ferruginous white.

A tame quagga, which Dr. Sparrman saw at the Cape, was so pleased with the familiarity of man-

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kind, that, instead of shunning those who approached it, it came up to receive their caresses. The quagga is much more tractable than the zebra, and is even yoked by the colonists at the Cape, in teams, with horses. It is remarkable of this animal, likewise, that notwithstanding its being of a mild character, it is an overmatch for the hyæna; pursues that fierce creature whenever it makes its appearance; and protects the horses with whom it associates from the hyæna's violence, from which they would otherwise suffer. The quagga is, like the zebra, a social animal, but never associates with the zebra.

CLOVEN-FOOTED HORSE.

THE very name of this species, seems to imply a kind of equivocal and anomalous being; one of the most prominent characters of the present genus being a simple, or undivided hoof. Indeed, if only a single specimen of this animal had been described, we might have hesitated as to admitting it otherwise than as an accidental variety.

The cloven-footed horse is a native of South America, and was first described by Molina, in his Natural History of Chili. In its general appearance, size, colour, and many other particulars, both external and internal, it resembles the ass; but has the voice and ears of a horse, and has no cross, or transverse bands over the shoulders. It is very well strong, and swift, and is found in the rocky regions of the Andes, or Cordilleras of Peru and Chili. The hoofs are divided like those of ruminant animals.

It is singular that this curious species, which seems as it were to form a kind of link between the cloven-hoofed and whole-hoofed tribes, should have

so long remained unknown to the naturalists of Europe.

HIPPOPOTAMUS TRIBE.

ONLY one species has hitherto been discovered as belonging to this tribe. This has four front teeth in each jaw ; the upper ones standing distant by pairs, the lower prominent, and the two middle ones the longest. The canine teeth are solitary ; those of the lower jaw extremely large, curved, and cut obliquely at the ends. The feet are each armed at the margin with four hoofs.

HIPPOPOTAMUS.

THE hippopotamus is a very large animal, exceeding even the rhinoceros in size. He is sometimes not less than seventeen feet long, and generally about seven feet in height. His head is of an enormous size ; his mouth amazingly wide ; the jaws are armed, each with four cutting teeth, and two tusks. The teeth in the lower jaw are straight, and point forwards almost horizontal ; the two middlemost longer than those on the sides ; those in the upper jaw are disposed at regular distances from each other. The tusks in the upper jaw are short ; those in the lower very long, and truncated obliquely. A tooth is sometimes twenty-seven inches long, and weighs six pounds nine ounces. In figure, the hippopotamus resembles an ox more nearly than any other common





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animal. His eyes and nostrils are disproportionately small. His ears are small, pointed, and covered within with a thick lining of short, fine hairs. A few slender tufts of hair are scattered over the lips. The body is thinly covered with hair, at first sight scarcely discernible. It appears mouse-coloured at coming out of the water, but when dry of an obscure brown. On the neck, the hair is thicker than on the rest of the body, but not so thick as to form a mane. The tail is almost bare, and about a foot in length. The legs are short and thick; the hoofs divided into four separate parts. Though an amphibious animal, the hippopotamus has no membranes connecting the divisions of the hoofs.

Africa seems to be the only division of the globe inhabited by this species. The Nile, the Niger, the Gambia, the Zaira, are the chief rivers in which they have been discovered. But they are observed through all the other considerable rivers, and the lakes of the African continent. From the information of the Jesuits, and of Bruce, a later and more accurate observer, we learn that they abound in all the lakes and rivers of Abyssinia, Nubia, and Upper Egypt. Cultivation has expelled them from Lower Egypt. Sparrman represents them as not less numerous in the southern parts of Africa. It had been imagined, that hippopotami never ventured into the ocean, and scarce ever descended so low as to the mouths of rivers; but this philosophical traveller relates, that he actually observed several hippopotami in salt water, at the mouths of the rivers Kromme and Camtour; and in the district of Krakekama, saw on the sea-beach, evident traces of one of these animals that had come out of sea, but instantly retired back: he was also informed by a captain Burtz, that on the eastern coast of Africa he had

often seen hippopotami raise their heads above the surface of the sea, to breathe and neigh. In Guinea, the rivers, lakes, and marshy grounds, afford numbers of hippopotami.

The Behemoth of Job is understood to have been no other but the hippopotamus; his strength, his size, and his manners, are beautifully alluded to by the writer of that sublime book.

The manners of this species are pretty well known. Their awful size has attracted attention. They are said to be polygamous, and the females much more numerous than the males. The female brings forth her young on land, but suckles it under water. The calf is but of a very moderate size for some time after birth. One caught by Dr. Sparrman, which was supposed to be about a fortnight or three weeks old, measured three feet and a half in length, and two feet in height. It is suckled by the mother, and remains for a while under her protection; how long we know not. When caught, this calf uttered a squeaking noise, like a scared, or wounded hog. The voice of the adult animal is a neighing sound, which some describe as having a perfect resemblance to the neighing of a horse; while others represent it as a loud sonorous noise, between the bellowing of an ox, and the roaring of an elephant.

Although an inhabitant of the waters, the hippopotamus is well known to breathe air like land animals. On land he finds the chief part of his food. He may, perhaps, occasionally feed on aquatic plants; but he very often leaves the waters, and commits wide devastations through all the adjacent cultivated fields. On the banks of the Nile, he often defeats the hopes of the husbandman; even a large field of corn or clover is soon entirely despoiled of verdure by his capacious jaws. In the south of Africa, he commits similar ravages.

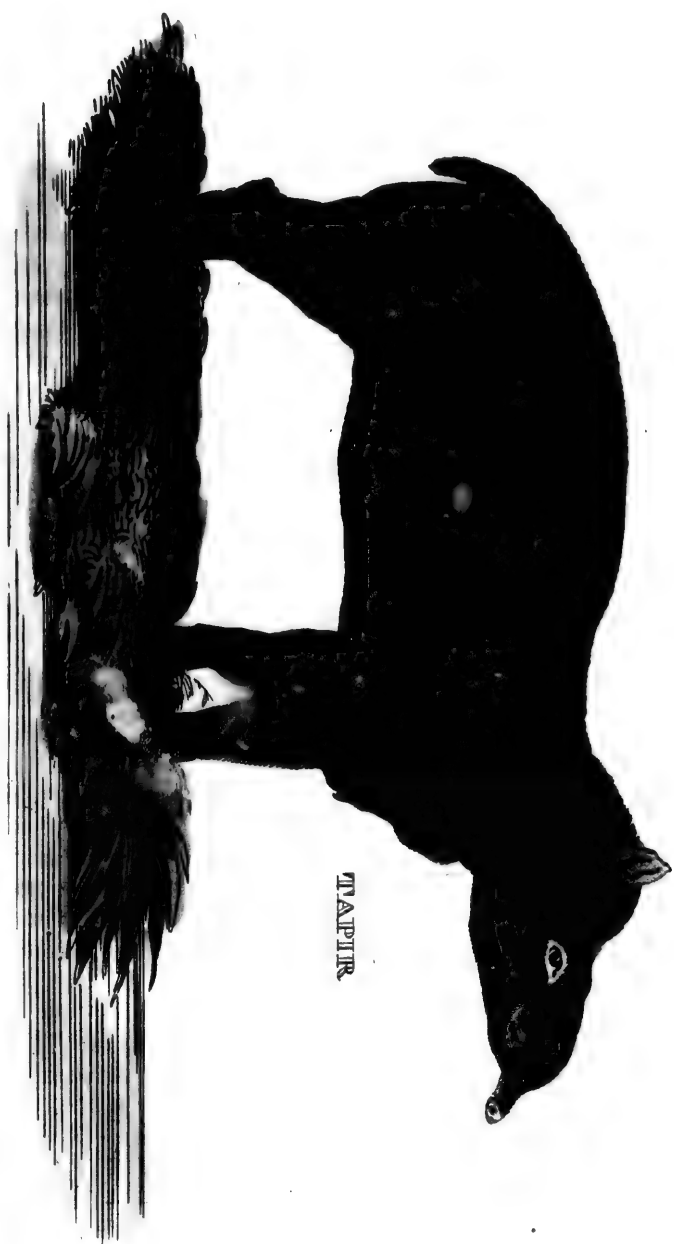
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Not only grass, but boughs and roots of trees and shrubs are articles of his ordinary food. In cultivated tracts, it is commonly in the night that the hippopotamus leaves his retreats in the rivers, and wanders into the fields. He descends to the bottom of the deepest river, and walks along it with the same slow, stately pace, as if on land, and breathing the open air. But he cannot continue under water beyond a certain length of time. He must ascend at intervals to the surface to discharge the contents of his lungs, and draw in fresh air. He appears at times in the sea, and is seen going out with the tide; but it appears probable, that seawater does not serve him to drink; for Sparrman relates, that a hippopotamus, who, having been disturbed in the rivers, had taken refuge in the sea, was observed to come every night on shore to drink water out of a neighbouring well, till he was at last shot. It has been pretended, that the hippopotamus devours great quantities of fish; but it appears with the fullest evidence, both from the relations of many travellers, and from the structure of the stomach in specimens which have been dissected, that he is nourished solely, or almost solely, on vegetable food. He walks with a tardy pace; and is capable of so little agility, that even a hillock, or wall of a very moderate height, presents to him an insurmountable barrier. Unless when accidentally provoked or wounded, he is never offensive. But, when his fury is provoked, revenge is easily in his power. With his teeth he easily breaks a boat in pieces; or where the river is not too deep, he will raise it on his back, and overturn it.

The Egyptians practise a very artful contrivance for destroying this animal. On some place where they expect an hippopotamus to pass, they throw a large quantity of pens, these the hungry animal ea-

gerly devours as soon as he perceives them; such a quantity of dry food soon disposes him to drink; and the water swelling the peas in his belly, bursts the vessels, and he falls dead on the shore. The Hot-tentots sometimes practise the same stratagem. But they more commonly either intercept the animal in pits dug in places through which he has been observed to pass, or shoot him with tin balls.

The hippopotamus affords many articles of considerable utility to human life. His flesh is a wholesome, and not unpleasant food. The Hot-tentots, the Caffrarians, and even the Dutch colonists at the Cape, eat it with great eagerness. In Egypt likewise this animal has been sought for his flesh. Dr. Pocock saw it sold in the market. The negroes of Angola, Congo, and of the whole west coast of Africa in general, though they venerate this mighty inhabitant of the rivers as a deity, yet scruple not to eat him. The flesh is said to be tender. The fat is not so rancid and greasy as that of most other animals. The gelatinous part of the feet, when well-dressed, is a great delicacy. The dried tongue of an hippopotamus is considered, even at the Cape of Good Hope, as a rare and savoury dish. Dr. Sparrman, on his return to Europe, furnished the king of Sweden's table with one of these tongues, two feet eight inches in length. The teeth of the hippopotamus are of a harder and whiter substance than those of the elephant. Dentists prefer them on account of these qualities, even to ivory, for the replacing lost teeth in the human jaw. The hide is rather thicker than that of the rhinoceros. It is sufficient load for a camel. The inhabitants of the Cape make excellent whips of it, which, after being used for some time, become more pliable than those made of the hide of the rhinoceros. The blood of this



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animal is said to be used by the Indian painters as one of their colours, and is brought in a skin.

Belon speaks of a tame hippopotamus as an animal of a very mild and gentle character : and Sparrman is of opinion, that a calf of this species might be brought up tame, without much difficulty ; and that thus the curiosity of Europeans might once more be gratified with a sight of living specimens, as were the Romans at the games of Scarrus.

A Dutch colonist, Sparrman tells, fancied he had found the os petrosum of the hippopotamus, reduced to powder, and taken in small quantities, an excellent remedy in cases of convulsion, particularly in children.

TAPIR TRIBE.

THE tapir tribe, of which but one species is at present discovered, has ten front teeth in both jaws, the canine teeth single, and incurvated ; five grinders in both jaws, on each side ; very broad feet, with three hoofs, and a false hoof on the fore feet.

TAPIR.

THE tapir is shaped somewhat like a hog, and of the size of a heifer half a year old. When young, his body is speckled with white ; after he is full grown, it changes to a dusky colour. The nose bears some resemblance to the proboscis of an elephant, and serves the same purposes ; extending far beyond the lower jaw, and being susceptible of con-

traction or dilation at the pleasure of the animal; its sides are furrowed in a singular manner. Only the male, however, it is said, is armed with this proboscis; the snout of the female, it seems, is not prominent, nor her upper jaw prolonged beyond the lower. The extremities of both jaws are pointed; each contains ten cutting teeth, and as many grinders. The ears are erect, oval, and bordered with white. The eyes are small; the back arched; the legs short; the tail bare, and of a very diminutive size. The hair over the body is short, like that of a horse. A bristly mane, the hair of which is an inch and a half in length, runs along the neck.

South America is the native country of the tapir. He inhabits along the eastern side of the Dutch, Portuguese, and Spanish dominions in that part of America. He is one of the largest quadrupeds of the new world. Marshes, and solitary woods, bordering on some lake or river, are his favourite retreats. In the heat of the day he conceals himself in the gloom of the forest, or under water; for, like the hippopotamus, he is, in some measure, amphibious, swims well, or dives and walks at his ease on the bottom. If roused from the forest, he retreats for security to the water. At night he wanders abroad in search of food. He lives on grass, sugar-canes, and fruits. His voice is a hissing whistling noise; he is a salacious, slow, and sluggish animal. He is an object of pursuit to the Indian hunters. His skin often resists an arrow, or musket-ball; and when harrassed by dogs, he forgets his natural mildness, turns upon them, and often tears their skin, or mutilates their limbs. Yet his skin is sometimes penetrated by the poisoned arrows of the Indians; and numbers of dogs will overpower him, although a part fall in the attack.

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He is capable of domestication. In Guiana, the tapir is sometimes introduced into the farm yard. When gently treated, he, like other naturally mild animals, contracts great familiarity with man, distinguishes his master, discovers affection to the hand that feeds him, and will slip his nose into the pockets of people who approach him, in search of food.

The thickness, and the close texture of his skin, render it an article of considerable value. His flesh is eaten by the native Americans, but not a very delicate species of food. The legs, if roasted for four and twenty hours, become, it is said, not disagreeable even to the palate of an European. The Indians use the skin chiefly for bucklers.

HOG TRIBE.

THE manners of these animals are in general filthy and disgusting. They are fond of wallowing in the mire, and feed almost indifferently on animal and vegetable food, devouring even the most corrupted carcasses. With their strong leadenous snout they dig up the earth in search of roots and other aliment hidden under the surface.

They are exceedingly prolific.—The male is named the boar, the female sow, and the young ones are called pigs.

In the upper jaw there are four front teeth, the points of which converge: and, usually, six in the lower jaw, which project. The canine teeth, or tusks, are two in each jaw; those above short, while those below are long, and extend out of the

mouth. The snout is prominent, moveable, and has the appearance of having been cut off, or truncated. The feet are cloven.

COMMON HOG.

The wild boar, the stock or original of the domestic hog, is smaller than the tame hog, and does not vary in his colour as those of the domestic kind do, but is always found of an iron grey, inclining to black; his snout is much longer than that of the tame hog, and the ears are shorter, rounder, and black; of which colour are also the feet and the tail. He roots the ground in a different manner from the common hog; for as this turns up the earth in little spots here and there, so the wild boar ploughs it up like a furrow, and does irreparable damage in the cultivated lands of the farmer. The tusks also of this animal are larger than in the tame breed, some of them being seen almost a foot long. These, as is well known, grow from both the upper and under jaw, bend upwards circularly, and are exceedingly sharp at the points. They differ from the tusks of the elephant in this, that they never fall; and it is remarkable of all the hog kind, that they never shed their teeth, as other animals are said to do. The tusks of the lower jaw are always the most to be dreaded, and are found to give very terrible wounds.

The wild boar can properly be called neither a solitary nor a gregarious animal. The three first years the whole litter follows the sow, and the family lives in a herd together. They are then called beasts of company, and unite their common forces against the invasions of the wolf, or the more formidable beasts of prey. Upon this their principal safety while young depends, for when at-



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tacked, they give each other mutual assistance, calling to each other with a very loud and fierce note ; the strongest face the danger ; they form a ring, and the weakest fall into the centre. In this position few ravenous beasts dare venture to attack them, but pursue the chase where there is less resistance and danger. However, when the wild boar is come to a state of maturity, and when conscious of his own superior strength, he then walks the forest alone and fearless. At that time he dreads no single creature, nor does he turn out of his way even for man himself. He does not seek danger, and he does not much seem to avoid it.

This animal is therefore seldom attacked, but at a disadvantage, either by numbers, or when found sleeping by moonlight. The hunting the wild boar is one of the principal amusements of the nobility in those countries where it is to be found. The dogs provided for this sport are of the slow heavy kind. Those used for hunting the stag, or the roebuck, would be very improper, as they would too soon come up with their prey ; and, instead of a chase, would only furnish out an engagement. A small mastiff is therefore chosen ; nor are the hunters much mindful of the goodness of their nose, as the wild boar leaves so strong a scent, that it is impossible for them to mistake its course. They never hunt any but the largest and the oldest, which are known by their tracks. When the boar is rear'd, as is the expression for driving him from his covert, he goes slowly and uniformly forward, not much afraid, nor very far before his pursuers. At the end of every half mile, or thereabouts, he turns round, stops till the hounds come up, and offers to attack them. These, on the other hand, knowing their danger, keep off, and bay him at a distance. After they have for

awhile gazed upon each other with mutual animosity, the boar again slowly goes on his course, and the dogs renew their pursuit. In this manner the charge is sustained, and the chase continues till the boar is quite tired, and refuses to go any farther. The dogs then attempt to close in upon him from behind; those which are young, fierce, and unaccustomed to the chase, are generally the foremost, and often lose their lives by their ardour. Those which are older and better trained, are content to wait until the hunters come up, who strike at him with their spears, and, after several blows, dispatch or disable him. The instant the animal is killed, they cut off the testicles, which would otherwise give a taint to the whole flesh; and the huntsmen celebrate the victory with their horns.

The domestic hog is, generally speaking, a very harmless creature, and preys on no animals but either dead ones, or such as are incapable of resistance. He lives mostly on vegetables, yet can devour the most putrid carcases. We, however, generally conceive him to be much more indelicate than he really is. He selects, at least, the plants of his choice, with equal sagacity and niceness, and is never poisoned, like some other animals, by mistaking noxious for wholesome food. Selfish, indocile, and rapacious, as many think him, no animal has greater sympathy for those of his own kind. The moment one of them gives the signal of distress, all within hearing rush to its assistance. They have been known to gather round a dog that teased them, and kill him on the spot. Inclose a male and female in a sty when young, and the female will decline from the instant her companion is removed, and will probably die of a broken heart. This animal is well adapted to the mode of life to which it is destined. Having to

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gain a subsistence principally by turning up the earth with its nose ; we find that the neck is strong and brawny ; the eyes small, and placed high in the head ; the snout long ; the nose callous and tough ; and the power of smelling peculiarly acute. The external form is, indeed, very unwieldy, but by the strength of his tendons the wild boar is enabled to fly from the hunters with surprising agility. The back toe on the feet of this animal prevents its slipping while it descends steep declivities.

In Minorca the hog is converted into a beast of draught ; a cow, a sow, and two young horses, have been seen in that island yoked together, and of the four the sow drew the best. The ass and the hog are here common helpmates, and are frequently yoked together to plow the land. In some parts of Italy, swine are used in hunting for truffles, which grow some inches deep in the ground. A cord being tied round the hind leg of one of the animals, the beast is driven into the pastures, and we are told that whenever it stops and begins to root with its nose, truffles are always to be found.

In proof that these animals are not destitute of sagacity, it would perhaps be unnecessary to recite any other accounts than those of the various "*learned pigs*" which have at different times been exhibited in this country. The following is, however, an instance more surprising than, perhaps, any even of these :—A gamekeeper of Sir Henry Mildmay (named Tupor,) actually broke a black sow to find game, and to back, and stand. Slut, which was the name he gave her, was rendered as staunch as any pointer. After Sir Henry's death, this *pig-pointer* was sold by auction for a very considerable sum of money ; but possibly the secret of breaking swine to the field expired with the inventor.

The hog is one of those animals that are doom-

ed to clear the earth of refuse and filth ; and that convert the most nauseous offals into the richest nutriment in its flesh. It has not altogether been unaptly compared to a miser, who is useless and rapacious in his life, but at his death becomes of public use, by the very effects of his sordid manners. During his life he renders little service to mankind, except in removing that filth which other animals reject.

The extreme thickness of his hide and fat renders the hog almost insensible to ill-treatment, and instances have even occurred of mice eating their way into the fat on the back of one of these animals without incommoding the creature. Although naturally inoffensive, he possesses powers which, when called into action, render him a very formidable enemy. He is, however, stupid, inactive, and drowsy ; and nothing but the calls of appetite interrupts his repose, to which he always returns as soon as this is satiated.

The senses of smelling and taste are enjoyed by these animals in great perfection. Wind seems to have great influence on them, for when it blows violently they seem much agitated, and run towards the sty, sometimes screaming in a most violent manner. Naturalists have also remarked, that on the approach of bad weather, they will bring straw to the sty, as if to guard against its effects. The country people in some parts of England have a singular adage that " pigs can see the wind."

The female goes four months with young, and has very numerous litters, sometimes so many as twenty at a time. These animals live to a considerable age, even to twenty-five or thirty years. The flesh, though very nutritious, from not being so digestible as some other kinds of animal food, is supposed to be unwholesome to persons who lead sedentary lives.

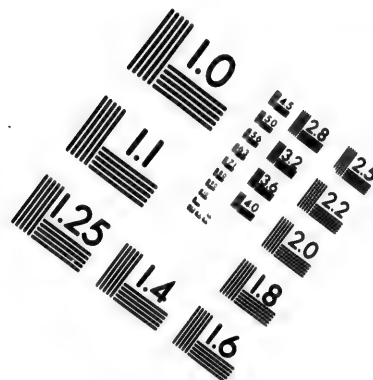
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In the island of Sumatra there is a variety of this species that frequents the impenetrable bushes and marshes of the sea-coast. These animals live on crabs and roots ; they associate in herds, are of a grey colour, and smaller than the English swine. At certain periods of the year, they swim in herds consisting of sometimes a thousand, from one side of the river Siak to the other, at its mouth, is three or four miles broad, and again return stated times. This kind of passage also takes place in the small islands, by their swimming from one to the other. On these occasions they are hunted by a tribe of the Malays, distinct from all the others of the island, who live on the coasts of the kingdom of Siak, called Salettians.

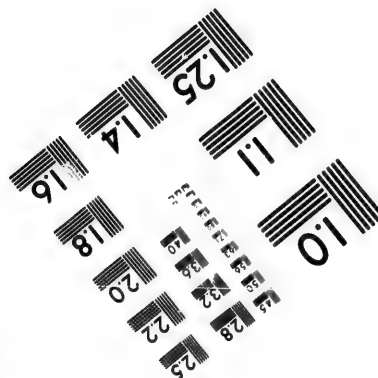
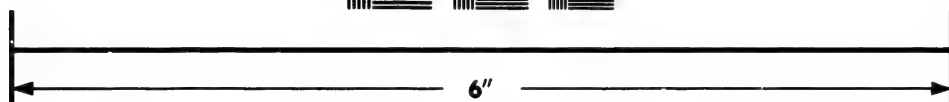
These men are said to smell the swine long before they see them, and when they do this, they immediately prepare their boats. They then send out their dogs, which are trained to this kind of hunting, along the strand, where, by their barking, they prevent the swine from coming ashore, and concealing themselves among the bushes. During the passage the boars precede, and are followed by the females and the young, all in regular rows, each resting its snout on the rump of the preceding one. Swimming thus in close rows, they form a singular appearance.

The Salettians, men and women, meet them in their small flat boats. The former row, and throw large mats, made of the long leaves of the *Pandanus odoratissima* interwoven through each other, before the leader of each row of swine, which still continues to swim with great strength ; but, soon pushing their feet into the mats, they get so entangled as to be able either no longer to move them, or only to move them very slowly. The rest are, however, neither alarmed nor disconcerted, but keep close to each other, none of them leaving the position in





A resolution test chart featuring various patterns of horizontal and vertical lines of increasing frequency. Each pattern is accompanied by a numerical value indicating its resolution. The values include 1.0, 1.1, 1.25, 1.4, 1.6, 1.8, 2.0, 2.2, 2.5, 2.8, 3.0, 3.2, 3.6, 4.0, 4.5, 5.0, 5.6, 6.3, 7.1, 8.0, 9.0, 10, 11.2, 12.5, 14, 16, 18, 20, 22.5, 25, 28, 32, 36, 40, 45, 50, 56, 63, 71, 80, 90, 100, 112, 125, 140, 160, 180, 200, 225, 250, 280, 320, 360, 400, 450, 500, 560, 630, 710, 800, 900, 1000, 1120, 1250, 1400, 1600, 1800, 2000, 2250, 2500, 2800, 3200, 3600, 4000, 4500, 5000, 5600, 6300, 7100, 8000, 9000, 10000.



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which they were placed. The men then row towards them in a lateral direction, and the women, armed with long javelins, stab as many of the swine as they can reach. For those beyond their reach they are furnished with smaller spears, about six feet in length, which they are able to throw to the distance of thirty or forty feet with pretty sure aim. As it is impossible for them to throw mats before all the rows, the rest of these animals swim off in regular order, to the places for which they get out, and for this time escape the danger. As the dead swine are found floating around in great numbers, they are picked up and put into larger boats, which follow for that purpose.

Some of these swine they sell to the Chinese traders who visit the island; and of the rest they preserve in general only the skins and fat. The latter, after being melted, they sell to the Maki Chinese; and it is used by the common people instead of butter, as long as it is not rancid, and also for burning in lamps, instead of coconut oil.

ETHIOPIAN HOG.

THIS animal is much allied, in its general appearance, to the common hog; but is particularly distinguished from it by a pair of large semicircular lobes or wattles placed beneath the eyes. The snout is also much broader, and very strong and callous.—It is a native of the hotter parts of Africa, and is a very fierce and dangerous animal. It resides principally in subterraneous recesses, which it digs with its nose and hoofs; and, when attacked or pursued, it rushes on its adversary with great force, striking, like the common boar, with its tusks, which are capable of inflicting the most tremendous wounds.

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These creatures inhabit the wildest, most uncultivated, and hottest parts of Africa, from Senegal to Congo, and they are also found on the island of Madagascar. The natives carefully avoid their retreats, since, from their savage nature, they often rush upon them unawares, and gore them with their tusks.

A boar of this species was, in 1765, sent by the governor of the Cape of Good Hope to the prince of Orange. From confinement and attention he became mild and gentle, except when offended; in which case, even those persons to whose care he was entrusted were afraid of him. In general, however, when the door of his cage was opened, he came out in perfect good humour, gaily frisked about in search of food, and greedily devoured whatever was given him. He was one day left alone in the court-yard for a few minutes, and on the return of the keeper was found busily digging into the earth, where, notwithstanding the cemented bricks of the pavement, he had made an amazing large hole, with a view, as was afterwards discovered, of reaching a common sewer that passed at a considerable depth below. It was not without much trouble, and the assistance of several men, that his labour could be interrupted. They, at length, however, forced him into his cage, but he expressed great resentment, and uttered a sharp and mournful noise.

His motions were altogether much more agile and neat than those of the common hog. He would allow himself to be stroked, and even seemed delighted with rough friction. When provoked, or rudely pushed, he always retired backward, keeping his face towards his assailant, and shaking his head, or forcibly striking with it. When, after long confinement, he was set at liberty for a little while, he was very gay, and leaped about in an

entertaining manner. On these occasions he would, with his tail erect, sometimes pursue the fallow-deer and other animals.

His food was principally grain and roots ; and of the former he preferred barley and the European wheat. He was so fond of rye-bread, that he would run after any person who had a piece of it in his hand. In the acts of eating and drinking he always supported himself on the knees of his fore feet ; and would often rest in this position. His eyes were so situated as to prevent his seeing around him, being interrupted by the wattles and prominences of his face ; but, in compensation for this defect, his senses of smelling and hearing were wonderfully acute.

Dr. Sparrman, when he was in Africa, pursued several pigs with the old sows, with the intention of shooting one of them, but though he failed in this object, their chase afforded him singular pleasure. The heads of the females, which had before appeared of a tolerable size, seemed, on a sudden, to have grown larger and more shapeless than they were. This momentary and wonderful change, astonished him so much the more, as riding hard over a country full of bushes and pits, he had been prevented from giving sufficient attention to the manner in which it was brought about. The whole of the mystery, however, consisted in this : each of the old ones, during its flight, had taken a pig in its mouth ; a circumstance that also explained to him another subject of his surprise, which was, that all the pigs which he had just before been chasing along with the old ones, had vanished on a sudden. But in this action we find a kind of unanimity among these animals, in which they resemble the tame species, and which they have in a greater degree than many others. It is likewise very astonishing, that the pigs should be carried

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about in this manner between such large tusks as those of their mother, without being hurt, or crying out in the least. He was twice afterwards witness to the same circumstance.

The flesh is very good, and not unlike that of the German wild boar.

CAPE VERD HOG.

THIS animal is of the size of a common hog, and peculiar to Africa. The species are diffused through the tract of country between Cape Verd and the Cape of Good Hope. The head is long; the nose slender. The tusks are large, hard as ivory, and in the upper jaw, thick and truncated obliquely. The ears are narrow, erect, and pointed. The tail is slender, and terminates in a tuft, reaching down to the highest joint of the leg. Each jaw is furnished with twelve grinding teeth. The body is covered all over with long, fine bristles. This species has been, by some naturalists, confounded with that immediately preceding. But the form of the head, the structure of the mouth, and the manner in which the body is covered, establish a sufficient distinction between them.

BABYROUSSA.

THE babyroussa is of the size of a common hog, which it somewhat resembles; however, it is of a more slender form; but what chiefly distinguishes it, is the size and the shape of its tusks. Each jaw is furnished with two. Those in the inferior jaw rise eight inches out of their sockets, towards the eyes. The sockets of those above are placed on the outside of the jaw; and the tusks rise twelve inches out of them; they bend like horns, till their

points nearly touch the forehead. The ears are small, erect, and pointed. A few weak bristles cover the back; the rest of the body is covered with a sort of soft wool. The tail is long, often twisted, and terminates in a point.

The babyroussa is found in the islands of Java-Celebes, and Boero in the East. A few individuals are often diffused through the other islands of the Indian Ocean. The species are naturally gregarious. Their sense of smelling is extremely acute. Plants, and leaves of trees are their favourite food. They grunt like our common hogs. They are not unsusceptible of domestication. To escape from a pursuer, they often rush into the sea, and swim to a distance, or conceal themselves by diving. They even swim occasionally from isle to isle. A babyroussa is often seen to rest its head in a forest, by hooking its upper tusks on some bough. None of these animals ever commit any devastations in gardens.

MEXICAN HOG.

THIS animal bears an imperfect resemblance to the common hog, but is smaller and more compact. Its body is about three feet in length. Its mouth is furnished with four cutting teeth in the upper jaw, with six in the lower, and with two tusks in each. Its head is not of such a taper, wedge-like form, as that of the common hog. Its ears are short, erect, and pointed. Its eyes are neither sunk nor prominent. The bristles covering its body, are long and stiff. They resemble, indeed, rather the quills of the porcupine, than the bristles of the hog. On the neck and back they are longer than on the sides. The belly is almost entirely bare. A band of white extends between the shoulders and the breast. There is no tail to protect the hinder

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parts. A gland on the back from which there constantly distils a wheyish, fetid liquor, is the most remarkable peculiarity of this species. The first Europeans who became acquainted with this animal, fancied this gland the navel, preposterously disposed by nature on the back, instead of the belly.

The manners of the Mexican hog are not very different from those of the hogs of Asia and Europe. Mexico, and all the warm climates of South America, possess numerous herds of this species. Their instincts and arms for offence and defence, are much the same as those of our hog. They seem more social in their dispositions. They are generally found associating together in parties. Though only an individual be singled out, the whole body joins with generous valour against an enemy. They grunt with a stronger and harsher voice than the hogs of Asia or Europe; but are scarce ever prompted by fear or rage, to squeak in the same wild tone. Forests are their favourite haunts; they resort not, like our domestic hog, or wild boar, to marshes and mires. Fruits, seeds, and roots, are their favourite food. They eat also serpents, toads, and lizards; and display great dexterity in tearing off the skin of those reptiles with their feet.

Their œconomy has not been very minutely studied by naturalists. A number of young ones are produced at a birth; and the mother treats them with the tenderness and solicitous care of a parent. Although existing chiefly in a wild state, they are susceptible of domestication; but no pains can overcome their natural stupidity and indocility. The beasts of prey, not less than man, are hostile to this species. The American leopard, or Jaguar, one of their most formidable enemies, often falls amid a herd, after destroying the greatest part of

them ; weary with slaughter, and rather exhausted by his own exertions than overcome by theirs. It killed in full health, the flesh of the animal is agreeable food ; provided the gland on the back be cut off, and the liquor which it secretes, carefully washed from the carcase at the instant of death.

There are probably several varieties of this species, distinguished by diversities of colour and size.

This animal constantly refuses to copulate with our European swine.

CETACEOUS ANIMALS.

THE cete, consisting of four tribes of animals, which live altogether in water, constitute Linnæus's seventh order of Mammalia. They inhabit chiefly the seas of the polar regions, and many of the species are of huge size. From their external shape, and habits, they seem nearly allied to the fish, yet they arrange with great propriety as an appendix to the four footed animals. It is true that they reside in the same element with the scaly tribes, and are, like them, endowed with progressive powers of motion in that element, yet in their internal structure they entirely agree with the quadrupeds.

Like the land animals, they breathe air by means of lungs : this compels them frequently to rise to the surface of the water to respire ; and on this account it is that they always sleep on the surface. Their nostrils are open, and situated on the sum-

mit of the head, which enables them to draw in the air without raising the mouth; and consequently the head out of water. These nostrils also serve them in expelling the superfluous water which they take in at the mouth every time they attempt to swallow their prey. They have also warm red blood; and they produce and suckle their young in the same manner as the land animals. Their flesh is red, and bears a great resemblance to that of the horse: some of it is very firm; and about the breast and belly it is mixed with tendons. They likewise resemble the quadrupeds in having moveable eye-lids, and true bones; and in their power of uttering loud and bellowing sounds, a faculty altogether denied to the scaly tribes.

The cetaceous animals have a smooth skin, not covered with hair. Their feet are very short; those in the fore part of the body being formed like fins, and the hind ones united into an horizontal tail. The substance of the latter is so firm and compact, that the vessels will retain their dilated state even when cut across.

The fat of this order of animals is what we generally term blubber: this is afterwards, by boiling, manufactured into oil. It does not coagulate in our atmosphere, and is probably the most fluid of all animal fats. It is found principally on the outside of the muscles, immediately under the skin, and is in considerable quantity. The blubber appears principally to be of use in poising their bodies; it also keeps off the immediate contact of the water with the flesh, the continued cold of which might chill the blood; and in this respect it serves a purpose similar to that of clothing to the human race.

NARWHAL TRIBE.

THIS genus of animals is distinguished by the having one tooth, and sometimes two teeth projecting from the upper jaw, long, straight, and spiral. It has a spiracle or breathing place on the top of its head. There are but two species hitherto discovered belonging to this genus, and one of these is somewhat obscure.

NARWHAL, OR SEA UNICORN.

THE narwhal is about twenty feet long, from the mouth to the tail, of a more slender make than the common Greenland whale; and its fat is in less abundance. It inhabits the seas of Iceland and Greenland, and the northern part of Davis's straits, and is seen in the same northerly regions with the rest of the cetaceous tribes. Nature has, however, distinguished it from every other kind of whale, by that formidable weapon in the form of a tooth, which projects from its upper jaw. Amongst all that variety of armour which she has conferred upon her different tribes in the animal kingdom, she has, perhaps, contrived no instrument of destruction so dreadful as the horn of the narwhal.

This extraordinary instrument generally springs from the upper jaw on the left side; into the socket of which it reaches a foot and a half. It is striated, and twisted in spires, as we sometimes see a bar of iron; its length is from seven to eight feet, and of the thickness of a man's arm: it is of a white colour, harder and heavier than ivory. From the size of this weapon, most naturalists consider it as an horn, rather than a tooth; but it

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resembles in every respect the tusks of a boar, or an elephant; it rises like them, from a socket in the jaw; it is of the same strong substance, and possesses the same solidity. Willoughby regards it as the only real example of an unicorn afforded by nature; and after a minute examination of all the substances that are imposed upon the public, for the horns of the unicorn, he pronounces them impositions on the credulity of mankind.

This naturalist had the greater merit in making a discovery of this nature, because in his time the capture of whales was not very frequent, and the means of detection were proportionably few in number. The tooth of the narwhal about a century ago was universally ascribed to some land animal; it had often been dug up among fossil substances, and from that circumstance it was naturally bestowed upon a terrestrial owner. Pliny had long ago described an animal resembling a horse, with a single horn spring from the middle of its forehead. Upon this animal, which a farther knowledge of nature has proved to be fictitious, the tooth of the narwhal was unanimously conferred; and the finding of so precious a remain, was considered as a fortunate incident, that afforded a strong testimony of the veracity of that historian.

But it was not the curiosity of mankind alone, nor the rareness of the object, and the singularity of its form, that brought the narwhal's tooth into such high repute in the different countries of Europe. A medicine was prepared from it, which was long given out by the quacks as an infallible specific against poison, and malignant fevers. At length, however, these frauds were detected and exposed by one of the privy counsellors, who had a concern in the whale fishery, and received by the return of his own vessels a number of those

teeth, some of which were of the enormous length of three yards.

The error of supposing this armour of the narwhal a horn, has led some writers to suppose, that as among quadrupeds the female was often found without horns, so these instruments of defence were only to be found in the male. This, however, has often been contradicted by actual experience; both sexes are found armed in this manner; and in all the varieties of the horn, whether wreathed or smooth, bended or straight, it is uniformly strong, sharp, and deeply fixed. There can be no doubt, but that an instrument of this nature is intended for the defence of the animal on which it is bestowed. It is thus that the narwhal uses it; whenever it is urged to employ this terrible instrument, it is said that it drives directly forward against its enemy, and pierces him through.

But notwithstanding this implement of war, and its amazing velocity and strength, the narwhal is one of the most harmless and peaceable inhabitants of the ocean. It wants teeth for chewing, and a throat for swallowing any bulky prey: of consequence it commits hostility against no animal; but is constantly seen sporting inoffensively among the great monsters of the deep, never attempting to injure any of them. It is called by the Greenlanders the forerunner of the whale; for wherever it is seen, that fish seldom fails soon to appear. The manners of these two species nearly resemble each other; the food of both is those insects which we shall hereafter describe; and both are peaceable and innocent, though qualified by their strength or their arms to spread general destruction.

So little does this fish avail itself of those implements with which nature has provided it, that they appear rather an impediment, than a means

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of defence. It is at no pains to keep them in repair for action ; but on the contrary, the tooth is constantly seen covered with weeds, slime, and all the filth of the sea. In one instance, they evidently operate to the destruction of the owners ; for the narwhals being gregarious animals, they are no sooner attacked by a fishing vessel, than they crowd together in such a manner, that they are mutually embarrassed by their tusks, and are prevented from sinking to the bottom. In this situation the harpooners seldom fail of striking one or two of those that are longest detained upon the surface of the water ; and the quantity of the oil, which they produce renders their capture an object of very considerable emolument.

SPURIOUS NARWHAL.

A SPECIES most allied to the narwhal, but not, perhaps, strictly speaking, of the same genus : no teeth in the mouth ; but from the extremity of the upper mandible project two minute, conic, obtuse, teeth, a little curved at the tip, weak, and not above an inch long : body elongated, cylindric, black. Besides the pectoral fins, and horizontal tail, is also a minute dorsal fin. It must be numbered among the rarest of the whales. Its flesh and oil are considered as very purgative : inhabits the main ocean, seldom coming towards the shore : feeds on the loligo : has a spiracle like other whales. Both flesh and oil are eaten, but not without apprehension, for the reason before mentioned : generally found dead, being very seldom taken living.

The above is the description of Fabricius, in his *Fauna Groenlandica*, and the animals seems to have been described by no other author.

WHALE TRIBE.

MOST of the species of this tribe are sixty feet and upwards in length, and none of them under twenty. Their skin is in general black, or brown; very thick, and altogether without hair: it is often observed to have marine plants and shell-fish adhering to it. Some of the whales inhabit the northern, and some the southern ocean: and one or two of the species are found in both. The females generally produce but one young one at a time.

The external conformation of the fishes of this genus, no less than their size, serves to characterise them among the other inhabitants of the deep. They are covered with a dark coloured cinereous skin; they are moved, commonly against the wind, and with vast rapidity by means of a horizontal tail, aided by three fins; two pectoral, and one back fin; but in some species, the last is wanting. The head is commonly extremely large, in proportion to the size of the body, being in some equal to a third of the size of the fish. The animal is directed to its prey by two small eyes, furnished with eye-lids, and not superior in size to those of an ox. As the cetaceous tribes all breathe by means of lungs, they have no branchiæ nor external apparatus for that purpose. In the middle of the head, there is one, sometimes two orifices, through which they spout water to a vast height, and with a great noise. With these orifices raised above the surface, the whales sleep and breathe, gently moving their fins, to keep them poised upon the summit of the water. When immersed below the surface, or while devouring their food, water unavoidably rushes into the throat and

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lungs, and is, in this manner, ejected every time they rise for a supply of air. If the animal be wounded, it spouts the air and water with a violence sufficient to overset a ship ; and the noise it occasions, is heard like the discharge of cannon, at the distance of some miles.

Animals of such enormous strength and magnitude, we might imagine, would spread terror and devastation all around them, and make an indiscriminate slaughter of the inferior tribes. No creature, however, is less voracious than the common whale : almost no animal substance is ever found in its stomach ; it feeds, as some allege, upon different insects that float on the surface ; according to others, upon the medusa or sea-blubber. Its food, we are certain must be extremely minute, for the capacity of its throat does not exceed four inches, a size beyond all proportion, smaller than that of other animals.

The small quantity of food that suffices the whale, may justly surprize us, when we consider their size, and the numbers of these animals that often herd together. Had their voracity been proportioned to their bulk and numbers, the ocean itself would hardly have afforded a sufficient supply. The insects upon which they feed are black, and about the size of a bean : they are of a round form, like snails in their shells, and are seen floating in clusters together upon the waves. These the whale sucks up in great numbers, and bruises them with the barbs or pipes with which its mouth is internally covered. Nourished with this food, it becomes the fattest of all animals, whether terrestrial or aquatic.

To a slender appetite, the whale adds peaceable and harmless manners : it pursues no other fish, but leads an easy and indolent life on the bosom of the waves, and is inoffensive, proportion-

ed to its ability to do mischief. Among land animals, we have had occasion to observe, that sovereignty does not always follow strength or size : the elephant and camel fly before the tyger and the lion ; while the eagle possesses a decided superiority over the vulture and the ostrich. The same law obtains among the inhabitants of the ocean ; where the whale, if he holds the sceptre, holds it by a precarious tenure, for it may easily be wrested from him by his subjects. There is a strong analogy between his manners and those of the elephant : both are the strongest and largest animals in their respective elements ; neither offers injury ; and each is terrible when provoked to resentment.

The common whale, whatever honours vulgar prejudices may have conferred upon it, has no pretensions to the sovereignty of the ocean : on the contrary, as it is a peaceable and inoffensive animal, it has many enemies disposed to take advantage of its disposition, and inaptitude for combat. There is a small animal of the testaceous kind, called the whale-louse, that sticks to its body, as we see shells stick to the foul bottom of a ship. This creature insinuates itself chiefly under the fins ; and, in defiance of all the efforts of the whale, it still keeps its hold, and lives upon the fat, which it is provided with instruments to extract. The fishermen, however, often witness the encounters of the whale with a much more terrible enemy. At the sight of the sword-fish, this largest of animals is seen agitated in an extraordinary manner, and leaping from the water as if with fear. Wherever it appears, the whale perceives it at a distance, and flies from it in the opposite direction. The whale has no instrument of defence except the tail : with that it endeavours to strike the enemy ; and a single blow taking place, would effectually de-

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stroy the adversary : but the sword-fish is as active as the other is strong, and easily avoids the stroke ; then bounding into the air, it falls upon its subjacent enemy, and endeavours, not to pierce with its pointed beak, but to cut with its edges. The sea all about is seen dyed with blood, proceeding from the wounds of the whale ; while the enormous animal vainly endeavours to reach its invader, and strikes with its tail against the surface of the water, making a report at each blow louder than the noise of a cannon.

A still more fatal enemy of the whale, is an animal of its own order, called by the fishermen of New England, the killer. Of ferocious habits, and furnished with strong, sharp teeth, these animals, when they surround a whale, seldom allow it to come off with life. They tear and mangle its flesh on all sides, till fatigued with fighting, and overcome with wounds, it falls a prey at last to their fury ; and after it expires, the tongue is extracted, the only part which they devour.

By the constant hostilities of these various animals, the race of whales has probably been gradually diminishing in number for several ages. From the largeness of their size they cannot easily be concealed from their destroyers ; and as they are distinguished by sterility among the finny tribes, their destruction cannot soon be repaired : but of all the causes of the waste and diminution of this order of fishes, the interference of man has operated by far the most powerfully. His hostilities have been incomparably more fatal than those of all the rest of their enemies ; and a greater number is probably destroyed in a season by the ingenuity of the fishermen, than is devoured by the rapacious animals in an age.

The inhospitable shores of Spitzbergen were found to be the great resort of the whales ; and

for more than three centuries, notwithstanding the coldness of the climate, and the terrors of the icy sea, a great number of European ships have annually frequented those dreary abodes, and at length thinned the number of their inhabitants.

The whale fishery was carried on, for the sake of the oil, long before the use of whale-bone was discovered. The substance which has obtained that name, adheres to the upper jaw; and is formed of thin parallel laminæ, some of the longest four yards in length. Of these there are about seven hundred in all: about two thirds of that number are of a length fit for use, the rest being too short. The oil is extracted from different parts of the body; the tongue alone of some fish yielding from five to six barrels.

As early as the beginning of the fourteenth century, the Biscayneers were in possession of a very considerable trade to the coast of Greenland: they long enjoyed the profits of a lucrative traffic in train oil and whale-bone, before the English attempted to obtain any share of that commerce. What probably first gave them an idea of the advantages to be reaped from it, was the accident of one of their ships bringing a cargo of whale-bone and train oil from the bay of St. Laurence, part of the burden of two large Biscayan ships that had been wrecked there about the year 1594.

A few years after that period, the town of Hull had the honour of first attempting that profitable branch of trade. At present it seems to be on the decline, the number of fish being greatly reduced by their constant capture for such a vast length of time. It is now said that the fishers, from a defect of whales, apply themselves to seal fishery, from which animals they also extract an oil, and turn the skins to good account. This trade, however, will not probably be of any long continuance, for

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these shy and timid creatures will soon be induced to quit those shores by being perpetually harrassed. We are informed too, that the natives of Greenland already begin to suffer from the scarcity of seals in their seas. The flesh of these animals constitutes their principal subsistence : and should they be at last extirpated, or desert the coast, that miserable people would be in danger of perishing through want.

Before the year 1598, the whale seems never to have been taken on our coasts, but when it was accidentally driven ashore. It was then deemed a royal fish, and the king and queen divided the spoil between them ; the king asserting his right to the head, and her majesty by prerogative entitled to the tail. A total revolution in the fashion of eatables, and the great quantity of these fish that are now imported, has rendered this prerogative of royalty of less importance, and even ludicrous : formerly, however, the whale, as well as the porpoise, and dolphin, was probably a dish served at the royal board ; and from its magnitude it must have held a very respectable station there. Such dainties continued in vogue so late as the reign of Henry VIII ; for, in a household book of that prince, it is ordered, that if a porpoise should be too big for a horse load, allowance should be made to the purveyor. Even in the reign of queen Elizabeth, we find directions for the dressing and serving up of the dolphin with porpoise sauce ; a composition of vinegar, crumbs of bread, and sugar.

The flesh of the whale has always made a part of the food of some savage nations. The natives of Greenland, as well as the barbarous tribes that inhabit the vicinity of the south pole, eat the flesh prepared in various ways, and drink the oil, which is with them a first rate delicacy. The finding of a whale is an adventure considered among the most

fortunate circumstances of their wretched lives. They make their abode beside it ; and seldom remove till they have left nothing but the bones. In the day of Willoughby, the eating whale was growing into disuse in England ; and at present the Dutch sailors, as well as our own, will not taste it except in cases of urgent necessity ; it is said, however, that the French seamen frequently dress and use it as their ordinary food at sea. The wretched inhabitants of the island of Feroe, who live one half of the year on salted gulls, are also, we are told, very fond of salted whales flesh ; the fat of the head, after being well seasoned, they hang up in the chimney, and eat like bacon.

The internal structure of the whale, we have already remarked, resembles almost in every respect that of quadrupeds : like them they possess lungs, a bilocular heart, a diaphragm and urinary bladder.

As the cetaceous fishes resemble terrestrial animals in their conformation, so they are also distinguished by similar appetites and manners : among them the act of copulation is said to be performed *more humano*, and the female once in two years feels the access of desire. In the inferior tribes of fish, we can discern hardly any thing like pairing between the males and females, and have no vestiges of conjugal fidelity. The mutual attachment of the whales, however, exceeds whatever we are told of the constancy of birds.

Whenever a pair of whales are attacked by the fishers, they mutually assist, it is asserted, in the defence of each other ; and when one is wounded the other still attends, lending every aid in its power ; and no motives of fear, or self preservation, can urge it to desert its associate. An instance is recorded of one, which, after maintaining an obstinate conflict in defence of its companion, that

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had been struck by a harpoon, and on seeing it expire under the wounds it had received, stretched itself upon the dying fish and yielded up its breath at the same instant.

The period of gestation among the cetaceous fishes is said to be nine or ten months ; the female commonly produces one, and never above two young. During the time of her pregnancy, and particularly at the birth of her offspring, she is uncommonly fat. The embryo, it is said, when first perceptible, is about seventeen inches long ; and the cub, when excluded, is of a black colour, and ten feet in length. The two breasts of the whale are hid within the belly ; but when she suckles her young, she can produce them at pleasure, when they are protuberant about two feet before her body. The teats resemble those of a cow ; while the colour of the breasts, in some is white, in others speckled ; in all they are filled with a large quantity of milk, resembling that of land animals.

From what has been said concerning the procreation of whales, it appears, that these animals, in fecundity, are far inferior to the rest of the inhabitants of the deep. Nothing, however, can exceed their care and tenderness for their offspring, when produced. The female whale carries her cub with her wherever she goes ; and when pursued by the fishermen, she keeps it supported between her fins. Even when wounded, she still clasps her young one ; and when forced to plunge into the deep to avoid the strokes of her pursuers, she carries it down along with her ; but rises sooner than usual, to allow it time for respiration.

It is, however, but for a short period, that the young whales stand in need of this parental assistance : their growth is so remarkably rapid, that it may occasion some doubt concerning the accounts

that are given of their extraordinary longevity. The cubs continue at the breast of the mother only for a year, during which period they attain to a considerable size, and are called short-heads by the sailors. The mother, at the end of that period, is extremely lean and emaciated, while her cub is so large and fat, that it frequently yields above fifty barrels of blubber. The next year after they have left the breast, they are called stunts ; because they decrease in their fatness, and yield scarcely an half of the produce that is obtained from them when suckling. After two years, the young whales are called skull fish ; and though for awhile they continue of an inferior size, there is no mark by which their age can be ascertained.

Though the whales are gregarious animals, yet every individual propagates only with those of its own kind ; and without mixture of breed, they transmit an unpolluted race to posterity. When they are seen in shoals of different kinds together, or making their migrations in large companies, from one ocean to another, their object probably is security and mutual defence. Hardly any instinct less powerful than that of self preservation, from the attacks of smaller but more powerful fishes, could induce them to an union, by which the scarcity of food must be so greatly increased.

COMMON WHALE.

THIS is the largest animal known, if the kraken and sea-serpent be supposed fabulous. In the north sea, where it is most frequently taken, it measures about sixty feet in length ; and there is reason to believe that before the fishery had committed such vast depredations, there were many of this species seen of a far superior size.



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In the warmer latitudes, where they are less frequently taken, and consequently have time to gain their full size, they are still seen of the immense size of an hundred feet.

Though the antients were acquainted with this species of whale, yet it does not appear that they knew its uses, or practised the fishing of it. Aristotle has described it by the name of the bearded whale, from those hairs or strainers that surround the mouth to prevent the escape of its food, when the animal discharges the water from its mouth. Pliny has given it the name of musculus, probably for the same reason.

It has already been remarked, that the food of this species is the medusa or sea-blubber; and it is probably the necessity of procuring this food that confines the animal in its residence to the arctic circle. Few of them are ever seen so far south as the British shores, though the antients mention a large kind that obtained its name from frequenting our coasts.

The head of the common whale is equal to one third of the size of its body: the fistulæ, or two orifices for spouting out the water are placed in the middle. This species has no teeth: in their room are situated the black horny laminæ, called whale-bone, so long used in the ladies' stays, in the construction of umbrellas, and for various other purposes. These laminæ give off a part of their substance, which constitutes those bristles that surround the mouth, the supposed use of which has already been described. Closely confined by these bristles lies the tongue, the tenderest part of the animal, which was formerly salted up as a great delicacy.

About four yards distant from each other appear the eyes, externally not larger than those of an ox.

but constituting a pretty large ball within. This picturesque visage is rendered tremendous by the large opening of the mouth, which, when the jaws are extended, is no less than eighteen feet wide. On the back of this animal there is no fin: but the two lateral ones are exceedingly large; and with them, as we have seen, it supports its young. The tail is broad, semilunar, and horizontal; it is of such vast strength, that by a stroke of it upon the surface, the water is so much agitated as to overset a boat if it is near. The penis is included in a strong sheath, and is seven feet in length.

The colour of whales varies very much; the back being in some red, and the belly generally white. Some are marbled with black and white, while others are entirely black, and some white. Their skin is smooth and slippery, and their colours in the water are extremely beautiful. In the belly of one described by Rondeletius there was found no kind of fish only a sort of mucus, foam, water, and sea weed.

To the Greenlanders, as well as to the natives of more southern climates, the whale is an animal of essential importance; and these people spend much time in fishing for it. When they set out on their whale-catching expeditions, they dress themselves in their best apparel, fancying, that if they are not cleanly and neatly clad, the whale, who detests a slovenly and dirty garb, would immediately avoid them. In this manner about fifty persons, men and women, set out together in one of their large boats. The women carry along with them their needles and other implements to mend their husband's clothes, in case they should be torn, and to mend the boat, if it happen to receive any damage. When the men discover a whale, they strike it with their harpoons, to which are fastened lines or

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straps, two or three fathoms long, made of seal skin, having at the end a bag of a whole seal's skin, blown up. The huge animal, by means of the inflated bag, is, in some degree, compelled to keep near the surface of the water. When he is fatigued and rises, the men attack him with their spears till he is killed. They now put on their spring jackets (made all in one piece of a dressed seal's skin), with their boots, gloves, and caps, which are laced so tightly to each other, that no water can penetrate them. In this garb they plunge into the sea, and begin to slice off the fat all round the animal's body, even from those parts that are under water: for their jackets being full of air, the men do not sink, and they have means of keeping themselves upright in the sea. They have sometimes been known so daring as, while the whale was still alive, to mount on his back and kill him from thence.

FIN FISH.

THIS species is distinguished from the common whale by the fin upon the back, placed low, and near the tail. It is sometimes found in the British, but is more frequent in those tracts of the northern ocean, where the whale fishery is carried on. It is, however, a booty which the fishermen seldom choose to pursue: the whale-bone adhering to its upper jaw is short and knotty, and therefore of very little value: the blubber also yielded by this species is very inconsiderable in quantity; and these circumstances, added to its extreme fierceness and agility, render the capture both difficult and dangerous; our seamen generally neglect it.

But meagre as this animal may seem to those whose object is the procuring of oil, it is held in great esteem by the miserable Greenlanders; for

its flesh affords them a food, which to men so poorly supplied, is very agreeable.

This fish is generally of the same length with the common whale, but of a much more slender conformation. The lips are brown like a twisted rope: the spout-hole is as it were split in the top of its head, through which it blows water with much more violence, and to a greater height, than the common kind. The fishers are not fond of seeing it; for on its appearance the others retire from those seas. It is impossible to determine whether this species be the same with the *physalos* and *physeter* of the ancient writers, so vague are the terms in which they speak of that fish. If that particular name was assigned it from its faculty of spouting water, or blowing, the habit is not peculiar to any one species, but common to all the whale kind. It would appear from the name given it by Linnæus, that he believed this to be the animal spoken of by these writers.

PIKE-HEADED WHALE.

This species measures fifty feet, or more in length, and is found both in the northern and southern ocean. It is of a moderately slender form, somewhat thick on the fore parts; and its colour is black above, and white beneath; the upper part of the belly is marked by numerous longitudinal plaits, or wrinkles, the insides of which are of a red colour. The head is moderately large, and of a gradually tapering form, yet ending in a somewhat broad, or obtuse tip. It has a double spiracle, or blow-pipe on the head, the holes of which are approximated, and which it can close in such a manner, by a common operculum, as to appear single: before the nostrils on the head are three rows of circular convexities: the lower jaw

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is rather narrower than the upper ; the eyes are situated beyond the spiracle, on each side the head ; in the upper jaw are very numerous laminae of whale-bone, not above a foot in length ; and in the lower jaw is a cavity to receive them ; the tongue is large, fat, wrinkled, and liver-coloured, and from this towards the throat hangs a loose skin, like an operculum. The pectoral fins are large, entire on the posterior edge, but round-crenated on the anterior. The dorsal fin is of a fatty cartilaginous substance, and is situated on the hind part of the back, above the vent, and is nearly perpendicular. Behind the dorsal fin runs a carina, or sharp edge, as far as the tail, which is slightly divided into two somewhat pointed lobes. This species lives principally on a small species of salmon, called *salmo arcticus*, as well as on the *argonauta arctica* and the *ammodytes tobianus*, or launce. When in the act of opening its mouth, it dilates the abdominal plaits or furrows, which lie in pairs, and on account of the colour of their internal surface, present, at this juncture, a highly beautiful spectacle ; the fore part of the belly appearing as if elegantly striped with red. This species blows less violently than others ; and is often observed stationary, as it were, or as if sleeping on the surface, sometimes lying on one side, and sometimes striking out of the water, and flapping itself with its fins, as if to clear them from barnacles, &c. which occasionally adhere to them. It is a very timid animal, and always swims away from the physeter microps, or high-finned cachalot, which is its general enemy. Its flesh and oil are used like those of other whales ; and from the skinny flap at the root of the tongue, as well as from the intestines, are prepared windows by the Greenlanders.

BUNCHEO WHALE.

THIS species is a native of the northern seas, and is said to be of the same general form with the great whale, but of smaller size, and to have the back furnished with one or more tubercles: the variety with a single tubercle is found about the coasts of New England; the other, which has six tubercles along the back, is supposed to occur about the coasts of Greenland; but neither seem very accurately known: their whale-bone is said to be of a pale or whitish colour.

UNDER-JAWED WHALE.

THIS is a native of the northern seas, and seems much allied to the pike-headed whale, but grows to a much larger size, having been found, it is said, of the length of seventy eight feet, measuring thirty-five feet in girth; the head is large; the mouth very wide; the lower lip much broader than the upper, and semicircularly turned at its extremity, while the upper is somewhat sharp or pointed at the tip. The laminæ of whale-bone are black, and short in proportion to the size of the animal, the longest not measuring more than three feet; the spiracle is double, and placed on the front; the belly is marked by plaits or furrows, as in the *balæna boops*, and on the lower parts of the back is a fatty fin. The colour of this species is black above, and white beneath. In the year 1692 a specimen was taken on the coast of Scotland. Its dimensions were as above described; the tongue measured fifteen feet and a half in length, and the two spout-holes on the forehead were of a pyramidal form; the pectoral fins ten feet long, and the tail eighteen feet broad.

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ROSTRATED WHALE.

THIS is by far the most elegant in its appearance of all the whalebone whales. It is rarely known to attain the length of twenty-five feet. The head, upper part of the back, fins, and tail, are of a dark or bluish brown ; but the sides and abdomen are of a beautiful white, with a very slight tinge of pale rose or flesh colour, and are marked, for more than half the length of the animal, by very numerous longitudinal plaits, or furrows ; the ears are small, as is also the head, and the snout is much more elongated than in any other species, gradually tapering to the extremity, which is slightly pointed ; the back fin is small and situated at no great distance from the tail : the pectoral fins are small and narrow ; and the tail is divided into two longish and pointed lobes. The whole animal has an elegant fish-like form, and has none of that uncouth appearance which prevails in the larger species.

CACHALOT TRIBE.

THE fishes of this genus are not of such enormous size as those last described : they are, when full grown, from fifty to sixty feet long, and sixteen feet in thickness. Their heads are still more disproportioned to the size of the body, than that of the common whale : in the latter animal it is equal to a third of the body ; in the former it constitutes an half. The cachalots are distinguish

ed from all the other cetaceous tribes, by having sharp arcuated teeth in the lower jaw : their bodies being more slender, they are more active than the Greenland whale ; are capable of remaining longer at the bottom ; and yield a smaller quantity of oil. The tongue is commonly small, but the mouth and throat are so capacious, that the animal could easily swallow an ox. The teeth are about seven inches long, exceedingly thick and hard ; they enter, when the mouth is shut, into a number of cavities in the upper jaw, prepared for their reception.

This formidable conformation of the mouth and throat seems to indicate an extraordinary degree of voracity in these animals. The history of the cachalot corresponds to these appearances : for while the stomach of the whale is seen to contain hardly any thing but froth, that of the cachalot is crammed with a variety of different kinds of fishes ; some half digested, others whole ; some small, others eight or nine feet long. The cachalot, therefore, is probably one of the most rapacious fishes of the deep : and is as destructive among the lesser tribes, as the whale is harmless. But it is not to the smaller fishes alone, that this animal is formidable ; among these the contest is soon ended, for it can devour thousands at one swallow ; it pursues and terrifies those of its own order, the dolphin, and the porpoise to such a degree, that they are frequently driven ashore in endeavouring to escape.

Of the cachalot there are no less than seven varieties : that of a black colour, with two fins ; the cachalot with a white back, and the same number of fins ; the species with its spout-nole in the neck ; that with the spout near the mouth ; that with three fins, and sharp pointed teeth ; that with three fins, and sharp edged teeth ;

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and, lastly, the cachalot with three fins, and flat teeth. All these were indiscriminately termed spermaceti whales, till Mr. Pennant borrowed that name from the French, by which they are now distinguished.

From the smallness of its size, as well as its fierceness and agility, the capture of the cachalot would seldom be attempted by the fishers, were it not for the sake of those valuable medicines, spermaceti and ambergris, which these animals have been found to contain. The various purposes to which these substances are applied, both as drugs and articles of luxury, have rendered the cachalot, which supplies them, a fish in great request, and its capture the most advantageous object in the Greenland trade.

Spermaceti is the name erroneously given to that substance which is found in the head of the cachalot, and which is by no means the semen, but the brain of the animal. Goldsmith gives the following account of the method by which it is extracted. The outward skin of the head being taken off, a covering of fat appears, about three inches thick; and under that, instead of a bony skull, the animal has only another thick skin, that serves for a covering and defence of the brain. The first cavity, or chamber of the brain, is filled with that spermaceti which is supposed of the greatest purity, and is of the highest value. From this cavity there is generally drawn about seven barrels of the clearest spermaceti, that, thrown upon the water, coagulates like cheese. Below this there is another chamber, just over the gullet, which is about seven feet high; and this also contains the drug, but of less value. It is distributed in this cavity, like honey in a hive, in small celis, separated from each other by a membrane like the inner skin of an egg. In proportion as the oily substance is

drawn away from this part, it fills anew from every part of the body; and from this is generally obtained about nine barrels of oil. Besides this, the spinal marrow, which is about as thick as a man's thigh, and reaches all along the back-bone to the tail, where it is no thicker than one's finger, affords no inconsiderable quantity.

Formerly the spermaceti was obtained, but in small quantities, and was sold at a very high price, from the supposition of its great efficacy as a medicine. Though it still enters into the compositions of the apothecary, yet it is rather to give a consistency to his medicines than to add to their virtue; and since the art of converting the whole oil of the cachalot into spermaceti by boiling has been discovered, the article has decreased rapidly in its value. It has now fallen below the price of wax, and is used instead of it for candles.

Ambergris is the other medicine, for which mankind are indebted to the cachalot; and this substance, rather than the former, should have obtained the name of spermaceti, because it is found in the place where the seminal vessels of other animals are commonly situated. For a long time the world was taught to believe, that ambergris was a substance to be found only in small quantities upon the surface of the water. The trade in these articles was originally in the hands of men of obscure and suspicious characters; and this was one of the arts by which they endeavoured to add to the mysterious nature, and value of the commodity. Time, which reveals the secrets of the mercenary, has at last discovered that this medicine is the produce of the cetaceous fishes.

Among the intestines of the cachalot is found a bag three or four feet long, filled with liquor of a yellowish colour, and thinner than oil; and in this fluid, the ambergris is seen floating in round

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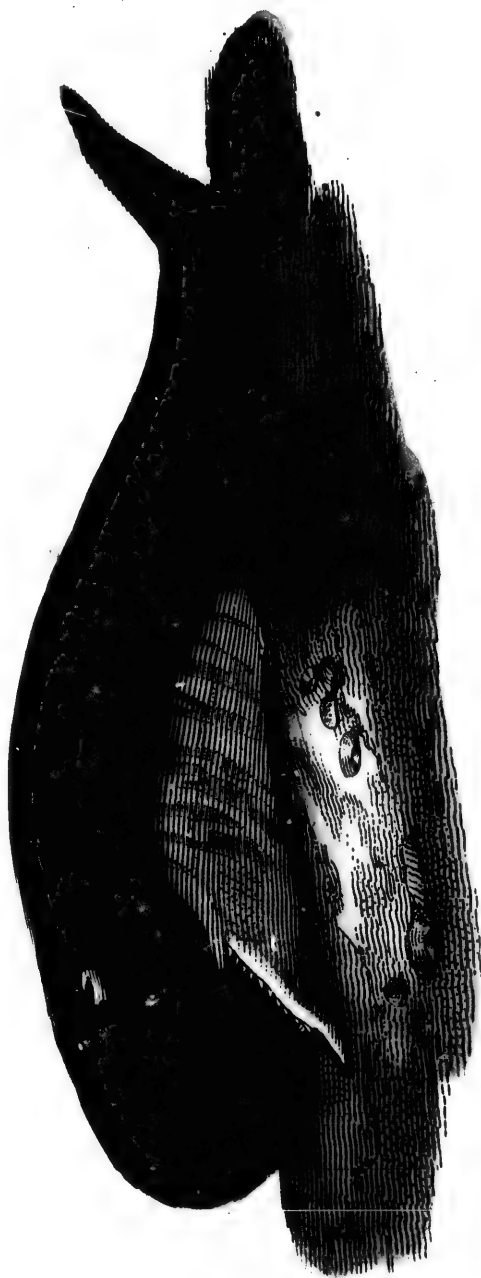
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BLUNT-HEADED-CAOCHALOT



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lumps, from one to twenty pounds weight, and never above four in the same fish. These balls of ambergris, the purposes of which, in medicine and perfumes, are so well known, are not indiscriminately found in every fish: it is only the oldest and strongest that yield it in any considerable quantity.

BLUNT-HEADED CACHALOT.

THIS species sometimes visits the coasts of Britain: a dead one was cast ashore near Edinburgh in the year 1769, which measured fifty-four feet, from the mouth to the tail; and its greatest circumference was thirty feet.

The head of this animal is of an enormous size, far exceeding the proportions of the whale. The upper jaw projects five feet beyond the lower; and its length is about fifteen feet, the other being only ten. Near the snout, which is quite blunt, and near nine feet high, is placed that orifice peculiar to the cetaceous order, by which they spout the water. The lower jaw is armed with forty-six teeth, all pointing outward to meet the sockets, where they enter into the upper. The teeth are about seven inches in circumference at the bottom, sharpening as you approach the top; they are all bent, and like the teeth of the other cetaceous fishes, they are white, and polished like ivory. Far back, and towards the hind part of its monstrous head, are placed the eyes, which are very small in proportion to the size of the animal whose motions they are intended to direct. The back fin of this species is wanting, and in its place there is found a large protuberance: the two pectoral fins are placed hard by the corners of the mouth, and are about three feet long. The penis is seven feet and a half; the tail bifurcated, and fourteen feet from tip to tip. Such are the monstrous dimensions of

404 SMALL, AND SMALL-EYED CACHALOT.

this unshapely animal. In its great outlines we still recognize the general characters of the order ; and though inferior in size to the whale, it is far more tremendous in its aspect, and fiercer in its manners.

SMALL CACHALOT.

THIS fish is described by Sibbald, who mentions a shoal consisting of an hundred and two that was cast on shore at the same time upon the Orkney isles. According to that writer, it wanted the spout-holes, that are reckoned characteristic of this order of fishes ; it is probable, however, that what he has described as nostrils, was this opening, which nature, as we have already seen, has destined for a different purpose.

This species is far inferior in size, to that above described ; the largest of that great number just mentioned did not exceed twenty-four feet in length. Its head is round, and the shape of the teeth the reverse of those of the blunt-headed kind. They are smaller at the back than at the top, where they are quite flat, marked with concentric lines. Their bottom is pierced with a small orifice, bearing no resemblance to the large cavity, described in the former species. The back fin is wanting ; instead of it is a rough knotty kind of space.

SMALL-EYED CACHALOT.

THIS is of equal, and sometimes even superior size to the first described species, and is a native of the northern seas. The head is very large, and nearly half the length of the body ; the eyes extremely small, and the snout slightly obtuse ; on the back is a long, and somewhat upright, narrow,

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and pointed fin. This species swims swiftly, and is said to be a great enemy to the porpesse, which it pursues and preys upon. Its colour is black above, and white beneath. Some of the supposed varieties of this whale, are said to be grown to the length of eighty or an hundred feet. The teeth are of a more curved form than the rest of the genus.

A variety is mentioned by Brisson, in which the teeth are straight, or nearly so.

HIGH-FINNED CACHALOT.

THIS is particularly distinguished by the great length and narrow form of its dorsal fin, which is placed almost upright on the back, it is said by some authors to appear at a distance like the mast of a ship; the animal growing, if we may believe report, to the length of an hundred feet. In its general appearance, it is said much to resemble the former species, of which it may, perhaps, be a variety, rather than truly distinct, but so much obscurity still prevails with respect to the cetaceous animals, that this point must be considered as very doubtful.

DOLPHIN TRIBE.

THESE animals inhabit various seas, being occasionally found both in hot and cold climates. They are much smaller than the whales, the largest species, which is the grampus, seldom exceeding twenty or five and twenty feet in length. The co-

four of three of the species is black on the upper, and white on the under parts; that of the remaining one is entirely white. They are often seen in shoals of from five or six, to twenty and upwards, gamboling about the ocean. Their food consists almost wholly of fish, and principally of mackerel and herrings.

They have teeth in both their jaws; and their spiracle or breathing hole is on the anterior and upper part of the head. Their tails, as in the other animals of this order, are horizontal, contrary to the position of the tails of fish, which are always upright.

PORPESSE.

THE porpesse is well known in all the European seas. In its general form it very much resembles the dolphin; it is, however, somewhat less in size, and has a snout both much broader and shorter. It is generally from six to seven feet in length; thick in the fore parts, and gradually tapering towards the tail. The colour is either a bluish black, or a very dark brown above, and nearly white beneath.

These animals live chiefly on the smaller fish, such as mackerel and herrings, which they pursue with much eagerness. They also root about the shores with their snout, in quest of food, in the manner of the hog; and Mr. Ray says that in the stomach of one that he dissected he found several sand-eels. They are often seen to gambol on the surface of the ocean, which is always looked upon as a sure sign of foul weather. They occasionally congregate in vast numbers.

In the river St. Lawrence, in Canada, these animals are very numerous; and, as they generally frequent the shoal water there, in search of prey,

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the natives adopt the following method of catching them. When the fishing season arrives, the people collect together a great number of willow twigs, or slender branches of other trees, and stick them pretty firmly into the sand-banks of the river, which at low water are left dry: this is done on the side towards the river, forming a long line of twigs at moderate distances, which at the upper end is connected with the shore, an opening being left at the lower end that they may enter. As the tide rises, it covers the twigs, so as to keep them out of sight: the porpesse, in quest of his prey, gets within the line, where he continues his chase till he finds, by the ebbing of the tide, that it is time to retire into deeper water. He now makes towards the river, but the twigs being then in part above water, and all agitated by the current, he no sooner sees them shaking about than he takes fright, and retreats backwards as far as he can from this tremendous rampart. The tide still continuing to ebb, he returns time after time; but, never being able to overcome his dread of these terrific twigs, he rolls about until he is deserted entirely by the water; when those who placed the snare rush out in numbers, properly armed, and in this defenceless state overpower him with ease. In this manner more than a hundred of these huge creatures (one of which will yield about a hog-head of oil) have been killed at one tide.

The porpesse was once considered as a sumptuous article of food, and is said to have been occasionally introduced at the tables of the old English nobility. It was eaten with a sauce composed of sugar, vinegar, and crumbs of fine bread. It is, however, now generally neglected, even by the sailors.

In America the skin of this animal is tanned and dressed with considerable care. At first it is ex-

tremely tender, and near an inch thick, but it is shaved down till it becomes somewhat transparent. It is made into waistcoats and breeches by the inhabitants ; and is said also to make an excellent covering for carriages.

DOLPHIN.

THE body of the dolphin is oblong and roundish, and the snout narrow and sharp-pointed, with a broad transverse band, or projection of the skin on its upper part. It is longer and more slender than the porpesse, measuring nine or ten feet in length, and about two in diameter. The body is black above and white below. The mouth is very wide, reaching almost to the thorax, and contains forty teeth ; twenty-one in the upper, and nineteen in the under jaw : when the mouth is shut, the teeth lock into each other.

This animal inhabits the European and Pacific Oceans, where it swims with great velocity, and preys on fish ; and it is sometimes seen adhering to whales when they leap out of the water. A shoal of dolphins will frequently attend the course of a ship for the scraps that are thrown overboard, or the barnacles adhering to their sides. Sir Hans Sloane was informed by some who had sailed in the Guinea ships, that the same shoal of dolphins has attended them for many hundred leagues, between the coast of Guinea and Barbadoes. And sir Richard Hawkins had them follow his ships above a thousand leagues ; he knew them to be the same by the marks in their bodies made by being struck with irons from the vessels.—Their motion, when they swim behind or alongside of a ship, is not very quick, affording frequent opportunities of being struck with harpoons. Some of them are caught by means of a line and hook baited with pieces of fish or garbage.

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They are fond of swimming round casks or logs of wood that they find driving in the sea.—In the sailing of the French fleet to Egypt, in the year 1798, several dolphins were occasionally observed under the bows of the vessels. Their motions, says M. Denon, somewhat resembled the undulating motion of a ship. They sprang forward in this manner sometimes to the distance of twenty feet and upwards.

The dolphin was in great repute among the ancients, and both philosophers and historians seem to have contended who should relate the greatest absurdities concerning it. It was consecrated to the gods, was celebrated for its love to the human race, and was honoured with the title of the Sacred Fish.

Kind gen'rous dolphins love the rocky shore,
Where broken waves with fruitless anger roar.
But though to sounding shores they curious come,
Yet dolphins count the boundless sea there home.
Nay, should these favourites forsake the main,
Neptune would grieve his melancholy reign.
The calmest stillest seas, when left by them,
Would rueful frown, and all unjoyous seem.
But when the darlings frisk in wanton play,
The waters smile, and ev'ry wave looks gay.

In all cases of shipwreck the dolphin was believed to be in waiting to rescue and carry on shore the unfortunate mariners.—Arion, the musician, when thrown overboard by the pirates, is said to have been indebted for his life to this animal.

But, past belief, a dolphin's arched back,
Preserved Arion from his destined wrack;
Secure he sits, and with harmonious strains,
Requites the bearer for his friendly pains.

How these absurd tales originated, it is impossible even to conjecture, for the dolphins certainly exhibit no marks of peculiar attachment to mankind. If they attend on the vessels navigating the ocean, it is in expectation of plunder, and not of rendering assistance in cases of distress. By the seamen of the present day they are held rather in abhorrence than esteem, for their frolics on the surface of the water are almost the sure signs of an approaching gale.

The painters both of antient and modern times have invariably depicted the dolphin with its back greatly incurvated. This crooked form, however, is never assumed by the animals, except in the act of leaping out of the water. Dolphins are said to change their colour before they die, and again after they are dead.

Their flesh was formerly in great esteem; it is, however, very dry and insipid: the best parts are those near the head. It is seldom eaten now, but when the animals that are taken happen to be young and tender.

GRAMPUS.

THE grampus is from twenty to twenty-five feet in length, of a very ferocious disposition, and feeds on the larger fishes, and even on the dolphin and porpesse. It is said, also, to attack other whales, and to devour seals, which it occasionally finds sleeping on the rocks; dislodging them by means of its back fin, and precipitating them into the water. In its general form and colour it resembles the rest of its tribe; but the lower jaw is much wider than the upper, and the body in proportion somewhat broader and more deep. The back fin sometimes measures six feet in length.

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It is found in the Mediterranean sea, as well as in both the northern and southern oceans.

This animal is a decided enemy to the whales ; great flocks of them attack the largest of these, fastening round them like so many bull dogs, making them roar out with pain, and frequently killing and devouring them.

From their vast agility they are not often caught. They seldom remain a moment above water ; but their eager pursuits sometimes throw them off their guard, and allure them into the shallow waters. In this case the hungry animal continues to flounder about, till either knocked on the head by those who happen to observe it, or till the tide comes seasonably to its relief. In one of the poems of Waller, a story (founded in fact) is recorded, of the parental affection of these animals. A grampus and her cub had got into an arm of the sea, where, by the desertion of the tide, they were inclosed on every side. The men on shore saw their situation, and ran down upon them with such weapons as they could at the moment collect. The poor animals were soon wounded in several places, so that all the immediately surrounding water was stained with their blood. They made many efforts to escape, and the old one, by superior strength, forced itself over the shallow into a deep of the ocean. But, though in safety herself, she would not leave her young one in the hands of assassins. She, therefore, again rushed in ; and seemed resolved, since she could not prevent, at least to share the fate of her offspring. The story concludes with poetical justice ; for the tide coming in, conveyed them both off in triumph.

BIDENT DOLPHIN.

THIS is introduced by Mr. Hunter into the Philosophical Transactions, and is the bottle-nosed whale of Dale. It has the general appearance of the dolphin, but has a much shorter snout, the front bulging out very much above, and has only two teeth, which are situated in front of the upper jaw. The specimen mentioned by Mr. Hunter measured twenty-one feet in length. The pectoral and back fins are small, and the latter placed pretty low on the back.

NARROW-SNOURED DOLPHIN.

KNOWN only from the head, or bones of the jaws. Supposed to inhabit the Indian seas. The jaws are extremely narrow in proportion to their length, which is about two feet ; the teeth are small, not numerous, distant, and shaped somewhat like the molares of quadrupeds.

BELUGA.

THIS is a species which appears to have been not very distinctly known till within a few years past. It is a native of the northern seas, and, like the porpesse, sometimes enters into rivers. It has been well described both by Fabricius and Pallas. It is of a more elegant appearance than the rest of this tribe, and when full grown is entirely milk-white, in some specimens tinged very slightly with rose-colour, and in others with blueish. It measures from twelve to eighteen feet in length, and sometimes even more, and preys upon all kinds of middle-sized fish ; as herrings, cod, flatfish, &c. &c. It is a gregarious species, and is often ob-

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served swimming in large shoals, the young accompanying their parents, and the whole forming a beautiful spectacle, from the unusual colour. They are also observed to follow boats for a considerable time together. The head of this species is rather small than large; and is joined to the body by a kind of almost imperceptible neck, or contracted part; the spiracle is situated on the top of the head, and is internally double; the eyes are very small, blueish, and the opening of the mouth by no means wide: the teeth are rather blunt, small, not very numerous, being about ten on each side, in both jaws; the auditory passages are situated a little beyond the eyes; the body is fish-shaped, thick in the middle, and tapering towards the tail, which is slightly lobed, or divided; the back has a kind of longitudinal ridge on the lower part, as in the great whale. The pectoral fins are thick and fatty, and are marked at the edge into five slight divisions; they contain the bones of the five fingers, which may be easily felt within the fin; there is no back fin. The skin on every part is smooth and slippery, and the animal is generally very fat.

When this animal swims, says Dr. Pallas, it bends the tail inwards in the manner of a craw-fish, by which means it possesses the power of swimming extremely fast, by the alternate incurvation and extension of that part. It has so great a general affinity with the seals, that the Samoids consider it as a kind of aquatic quadruped. It produces only one young at a birth, which is at first of a blue tinge, and sometimes grey, or even blackish; acquiring as it advances in age the pure milk-white colour.

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ADDENDA.

ANECDOTES AND DESCRIPTIONS, chiefly illustrative of the manners of the most remarkable animals, collected from various respectable authorities.

MONKEYS.

DR. Buchanan, in his travels through India, informs us of several curious particulars concerning the veneration in which monkeys are held by the inhabitants of that country.

The monkeys in India are extremely destructive, not only plundering the gardens, but in some instances attacking the houses of the inhabitants. At Mail-cotay the roofs are covered with thorns, to prevent these troublesome animals from tearing up the tiles, and casting them at the heads of the people who are traversing the streets. Yet such is the blindness of these idolaters, that the very person who applauds his Guru for having ground the Jainas, an heterodox people, with their priests, in an oil mill, because they would not listen to his instruction, will shudder with horror when he contemplates the murder of a monkey.

The monkeys are not only defended by popular superstition, but they are under the immediate protection of the Daseris, a kind of religious mendicants, who assemble round any person guilty of their death, and allow him no rest, until he bestows on the animal a funeral, that will cost him from one hun-

dred to two hundred fanams, according to the number of Daseris that have assembled on the occasion.

The proprietors of the gardens used formerly to hire a particular class of men, who took these animals in nets, and then by stealth conveyed them into the gardens of some distant village; but as the people there had recourse to the same expedient, all parties have become tired of this practice.

After all, the intelligent traveller delivers it as his opinion, that if government ordered the extirpation of the monkeys, the inhabitants would secretly rejoice, though for decency's sake they might raise an extraordinary clamour.

Some species of monkeys are said to paint their faces of a red colour, by rubbing them against the fruit of a certain tree, which, from that circumstance, has taken the name of the monkey's face tree.

The inhabitants of Java pretend to a fellow feeling for one species of monkey which they call wow-wow, they having a tradition, that their ancestors originally sprung from that species of ape.

RHINOCEROS

VAILLANT, in his second travels in Africa, gives us the following curious and animated description of the hunt of two of these animals.

In the midst of this immense menagery, the variety of which kept me in a continual state of enchantment, I was surprised not to find that prodigious number of rhinoceroses which had been mentioned to me by the people of Haripashorde. One day, however, Klaas, who was always concerned in every matter of importance, and the first to communicate agreeable intelligence, came in great haste to my tent to inform me, that he had observed, at some distance from my camp, two of these ani-

mals, standing quietly, close to each other, in the middle of the plain; and that I had it in my power to enjoy the pleasure of the finest hunt I had ever yet experienced.

The hunt indeed promised to be amusing; but, independently of danger, I foresaw that it was likely to be attended with difficulties. To attack two such formidable enemies, it was necessary to use great precautions, and that we should approach them in such a manner, as that they might neither see nor smell us, which is always very difficult. I at first proposed to form a ring, which should surround them on all sides; and to advance upon them, gradually contracting a circle so as to unite the moment we were about to commence our attack; but the savages assured me that, with these animals, this plan was impracticable. I gave myself up, therefore, entirely to their directions; and we set out armed-alike, with a good fusée, and with the necessary courage. All my hunters wished to be of the party, and each proposed to display the greatest prowess. I caused two of my strongest dogs to be led in a leash, in order that they might be let loose on the rhinoceroses in case it would be found necessary. We were obliged to make a long circuit to gain the lee side of them, lest they should smell us, along a river, the course of which we followed under cover of the large trees that grew on its banks, when Klaas soon made us observe the two animals, at about the distance of a quarter of a league in the plain.

As one of them was much larger than the other, I supposed them to be a male and a female. Motionless by the side of each other, they were still in the same posture in which Klaas had first seen them, but they stood with their noses to the wind, and consequently presented to us their rumps. It is the custom of these animals, when thus at rest, to place

themselves in the direction of the wind, in order that they may discover by their smell what enemies they have to dread. From time to time, however, they move their heads round to take a look behind them ; but it is only a look, and they soon return to their former position.

We had already deliberated on the disposition to be made for commencing the attack, and I was giving some orders to my company, when Jonker, one of my Hottentots, requested that I would permit him to attack the two animals alone, as a bekruyper.

My readers will here recollect, that, when I foolishly attempted to cross the elephant's river near its mouth, on the trunk of a tree, Jonker was one of the swimmers who saved my life ; and that in return, at the desire of my companions, I raised him to the rank of hunter. At that time he was entirely a novice in this exercise ; but I have already remarked, that he afterwards became a most excellent shot, and surpassed all the rest of my hunters, particularly in the art of creeping.

I have before observed that hunting in Africa has no resemblance to that in Europe ; that to get within reach of certain wild animals, we must approach them without being perceived ; and that it is impossible to get near them but by creeping on the belly. Those who have acquired this art are called bekruypers ; and it was in this quality that Jonker asked leave to attack alone the two rhinoceroses, assuring me that he would acquit himself to my satisfaction.

As his design would not prevent the execution of our plan ; and as, in case his particular attack should not succeed, it would not impede our general one, I granted this request. He then stripped himself naked, and, taking his fusee, proceeded towards the animals, creeping on his belly like a serpent.

In the mean time I pointed out to my hunters the different posts they were to occupy. They repaired to them by circuitous ways, each accompanied by two men. As for me, I remained on the spot where I was, with two Hottentots, one of whom held my horse, and the other my dogs; but, to avoid being seen, we posted ourselves behind a bush.

In my hand I held a glass, which had often enabled me to see the operation of stage machinery; and the effect of our theatrical decorations. How changed the scene! At this moment it brought before me two hideous monsters, which at times turned towards me their frightful heads. Their movements, which indicated fear and observation, soon became more frequent, and I was apprehensive they had heard the agitation of my dogs, who, having discovered them, made efforts to escape from the keeper, and rush upon them.

Jonker still kept slowly advancing, but with his eyes fixed on the two animals. If he saw them turn their heads, he stopped and remained motionless. One would have taken him for a large stone; and indeed, in this respect, I myself was deceived.

He continued creeping, with various interruptions, for more than an hour. At length I saw him proceed towards a large bush of euphorbia, which was only two hundred paces from the animals. Being certain, when he reached it, that he could conceal himself there without being seen, he rose up; and, casting his eyes every where around, to see whether his comrades had arrived at their posts, he made preparations for firing.

During the time he was creeping along, I had followed him with my eye; and, in proportion as he advanced, I felt my heart beat with an involuntary palpitation. This palpitation, however, increased, when I saw him so near the animals, and

just upon the point of firing at one of them. What would I not have given at that moment to have been in the place of Jonker, or at least by his side, that I might have brought down also one of these savage monsters? I waited with the utmost impatience for the report of the gun, and I could not conceive what prevented him from firing; but the Hottentot who stood near me, and who was able by the bare sight to distinguish him as perfectly as I could with my glass, informed me of his design. He told me, that Jonker did not fire, because he was waiting till one of the rhinoceroses should turn round, that he might, if possible, take aim at its head; and that on the first motion they made, I should hear the report.

Presently the largest of the two having looked behind, was immediately fired at. Being wounded, he sent forth a horrid cry; and, followed by the female, ran furiously towards the place from which the noise had proceeded. I found my heart now agitated by the most violent emotion, and my fear was carried to its utmost extent. A cold sweat diffused itself over my whole body; and my heart beat with such force, as to prevent me from breathing. I expected to see the two monsters tear up the bush, tread the unfortunate Jonker under their feet, and rend him to pieces; but he had thrown himself down with his belly on the ground; and this stratagem succeeded. They passed close by his side without perceiving him, and came straight towards me.

My fear now gave place to joy, and I prepared to receive them; but my dogs, animated by the report they had heard, became so restless on their approach, that, being unable to check them, I ordered them to be let loose, and encouraged them to the

When the animals saw this, they instantly turned

aside, and proceeded towards another of the hunters placed in ambush, from whom they received a third fire. My dogs, on the other hand, harassed them prodigiously, which still increased their rage. They kicked at them in the most terrible manner; ploughed up the plain with their horns; and, digging furrows in it seven or eight inches in depth, threw around them a shower of pebbles and stones.

During this time, we all kept approaching, in order to surround them more closely, and to unite against them our forces. The multitude of enemies by which they found themselves enclosed rendered them completely furious. The male, however, suddenly stopped; and, turning round to attack the dogs, endeavoured to rip up their bellies with his horns; and, while he was engaged in pursuing them, the female quitted him, and made her escape.

I was highly pleased at her flight, which I considered as a fortunate circumstance; for it is certain that, notwithstanding our number, and our arms, we should have been much embarrassed by two so formidable adversaries. I must even confess, that, without the assistance of my dogs, we should not have been able to combat, but with great hazard and danger, the one that remained. The bloody traces which he left wherever he went, announced that he had received more than one wound; but, reduced to despair, he only defended himself with the greater obstinacy,

After a fruitless attack, which continued for some time, he began to retreat; and seemed as if desirous of gaining some bushes, apparently with a view of finding shelter, and to prevent his being harassed but in front. I guessed his stratagem; and, in order to disappoint him, I rushed towards the bushes, and made a sign to the two hunters who were nearest me to advance thither also. He was only thirty paces from us, when we took possession; ac-

cordingly we all, at the same time, presented our pieces, and, discharging our three shots, he instantly fell, and was never after able to rise.

I beheld his fall with the utmost satisfaction : as a hunter, and a naturalist, it afforded me a double triumph.

Though mortally wounded, the animal still continued to defend himself when lying on the ground, as he had done when on his legs. With his feet he threw around him heaps of stones ; and neither we nor our dogs durst venture to approach him. I wished to put an end to his torments, by firing one more ball, and was making preparations for the purpose, when my people entreated me to desist. As I could not ascribe their request to sentiments of pity, I was at a loss to conceive what could be their motive.

I have already said, that all the savage tribes, and even the people at the Cape, and in the colonies, set a high value on the dried blood of the rhinoceros, to which they ascribe great virtues in the cure of certain disorders, and which they consider in particular as a sovereign remedy for obstructions. The reader will recollect, that when Swanepoel, intoxicated by Pinar, fell under the wheels of my carriage, and had one of his ribs broken, he asked me for the blood of the rhinoceros ; but as none of it could be had, he drank some brandy in its stead. Nature alone effected a cure ; but he ascribed it to the liquor, and acknowledged that this remedy, equally proper, he said, for the sick and the sound, was preferable to the other. His companions, however, had retained their prepossession ; and they were determined to have a store of rhinoceros' blood. The animal had lost a great deal by his wounds. It was with much regret that they saw the earth moistened with it around him, and they were apprehensive that a new wound would increase that loss.

Scarcely had the animal breathed his last, when,

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both old and new Hottentots all approached with eagerness, in order to collect the blood. With that view, they cut open its belly, and took out the bladder, which they emptied. One of them then applied the mouth of it to one of the wounds, while the rest shook a leg of the animal to make the blood flow more readily. In a little time, to their great joy, the bladder was filled; and I am persuaded, that with what was lost, they might have filled twenty. I had approached the body also, but with a different design; for my intention was only to measure and examine it. The savages of the horde, accustomed to see such animals very often, assured me that it was one of the largest of its species. I, however, did not believe them; and what induced me to doubt their information was, that its principal horn was only (in French measure) nineteen inches three lines in length; and I had seen horns much longer in the possession of some of the Dutch planters. The height of the animal was seven feet five inches, and its length from the snout to the root of the tail eleven feet six inches.

ELEPHANT

THE elephant, which is, perhaps, the mildest of all large animals, appears, when provoked, to be more prone to resentment than others of the most ferocious disposition. An instance of his vindictive spirit occurred to some Dutch boors, who travelled to the eastward in search of the place where the Grosvenor Indiaman was cast away, which is remarkable in this respect, and the authenticity of which cannot be called in question. This animal, after having received into his body several large musket balls, and twice fallen on the ground, crept with difficulty into a thick thorny coppice. "Conceiving him to be done for," says Jacob Van

Reenen, "Tjaart Vander Walt, Lodewyck Prins, and Ignatius Mulder, rode up to the thicket; when rushing furiously out of his hiding place, he lashed his proboscis round the body of Prins, who was on horseback, dragged him off to the ground, and trod him to death; then driving one of his tusks into his body, he threw him to the height of thirty feet into the air. The other two dismounting, hid themselves in the thicket. The elephant looking round him, and perceiving only the horse of Vander Walt, began to follow it, but, presently turning about, walked up to the spot where the corpse of Prins was lying. At this instant our whole party renewed the attack, when, after receiving several bullets, he again escaped into the thicket. Thinking that we should now see no more of him, we began to dig a grave for our unfortunate companion, when the elephant again rushed furiously upon us, drove the whole party away, and remained triumphant over the dead body. At the distance of an hundred paces, Tjaart Vander Walt put a bullet into his carcase, after which we all fired, when, having staggered for some time, he fell to the ground, and was put to death by the Hottentots." These natives pretend to say, that whenever an elephant is provoked to kill his enemy, he tears the carcase in pieces, and devours it: at least, such is their conclusion, as no vestige of the remains is ever found on the spot. Perhaps it is more consistent to suppose, that he carries it away to some place of concealment. It is a common observation that, numerous as these animals are in many parts of Southern Africa, neither the tusks nor any part of their skeletons are ever found above ground, which has led to the conclusion, that the elephants must bury their dead. Vander Kemp is inclined to believe the fact to be true. One of his party having shot an elephant, they went the following

morning with a view of taking out its tusks, when they found from fifteen to twenty of these animals busily employed in removing the dead corpse with their snouts.

At Hejuru, says Dr. Buchanan, I went into the forests about three cosses, to a small tank, farther than which the natives rarely venture, and to which they do not go, without being much alarmed by wild elephants. In this forest these animals are certainly more numerous than either in Chittagony or Pegu. I have never seen any where so many traces of them. The natives, when they meet an elephant in the day time, hide themselves in the grass, or behind bushes, and the animal does not search after them; but were he to see them even at a distance, he would run at them, and put them to death. It is stragglers only from the herds, that in the day time frequent the outer parts of the forest.

The herds that at night destroy the crops, retire with the dawn of day into the recesses of the forest; and thither the natives do not venture, as they could not hide themselves from a number. It is said that at the above-mentioned tank there was formerly a village; but that both it and several others on the skirt of the forest have lately been withdrawn, owing to an increased number of elephants, and to the smaller means of resistance which a decreased population allows. The forest is free from underwood or creepers; but the whole ground is covered with long grass, often as high as a man's head. This makes walking rather disagreeable and dangerous, as one is liable always to stumble over rotten trunks, to rouse a tiger, or to tread on a snake. These latter are said to be found of great dimensions, and have been seen as thick as the body of a middle-sized man. Their length does not exceed seven cubits

The Cad Curubaru are a rude tribe of Karnata,
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who are exceedingly poor and wretched. They watch the fields at night, to keep off elephants and wild hogs. Their manner of driving away the elephant is by running against him by a burning torch made of bamboos. The animal sometimes turns and waits till the Curubaru comes close up; but these poor people, taught by experience, push boldly on, and dash their torches against the elephant's head, who never fails to take immediate flight. Should their courage fail, and should they attempt to run away, the elephant would immediately pursue and put them to death. The Curubaru have no means of killing so large an animal, and on meeting one in the day time, are as much alarmed as any other of the inhabitants. These poor people frequently suffer from tigers, against which their wretched huts are a poor defence: and when this wild beast is urged by hunger, he is regardless of their burning torches.

The cutari rice is that most commonly cultivated in this part of India, as it is less liable than the others to be injured by the herds of wild elephants; for these animals though they eat rice, do not kill that kind when they tread on it.

Vaillant informs us, that there exists in some part of Africa, either a variety or species of the elephant, of which the male has no tusks. They are called by the Hottentots *poes-kops*, and are much more dreaded than other elephants. The same author assures us, that the feet of an elephant, when roasted on the embers, are esteemed rare and delicious morsels.

Dog

THE following anecdotes illustrate the character of the dog, and appear strongly to inculcate the belief of a merciful providence occasionally inter-

posing, almost miraculously, for the protection of the innocent.

Mr. Johnson, a traveller from Manchester, on his rout through Scotland, on horseback, was benighted; and passing a small public house on the road, he thought it better to take up his lodging there if possible, than to proceed further that night. On entering the house, he found only an old woman, who, to his inquiries, answered, that she would accomodate him with a bed, and provide for the horse in a small shed, if he would assist her in giving him hay, &c., as there was no other person then in the house. This was agreed to by Mr. Johnson, who, after taking a little refreshment, was shewn by the old woman to his bed-room.

A large Dane dog, which accompanied him on his journey, offered to go up to the room along with him, which the old woman strongly objected to; but Mr. Johnson firmly persisted in having him admitted. The dog, on his entrance, began to growl, and was very unruly. His master attempted to quiet him in vain—he kept growling and looking angrily under the bed, which induced Mr. Johnson to look likewise, when, to his great astonishment, he saw a man concealed at the further end. On encouraging the dog, he sprung immediately at the man, while Mr. Johnson seized his pistols, and presenting one to the man, who had a large knife in his hand, and was struggling with the dog, swore that he would instantly shoot him, if he made further resistance. The man then submitted to be bound, and acknowledged his intention was to rob and murder Mr. Johnson, which was thus providentially prevented by the wonderful sagacity of his faithful dog. Mr. Johnson after properly fastening the man, and securing the door, went (accompanied by his dog) to the shed where his horse was left, which he instantly mounted, and escaped without

injury to the next town, where he gave the minister of justice a full account of the horrid attempt, who had the culprit taken up and punished for the villany.

A favourite dog, belonging to an English nobleman, had fallen into disgrace, from an incorrigible habit of annoying the flocks of the neighbouring farmers. One of these having in vain driven the depredator from his premises, came at length to the offender's master, with a dead lamb under his arm, the victim of the last night's plunder. The nobleman, being extremely angry at the dog's transgression, rang the bell for his servant, and ordered him to be immediately hanged, or some other way disposed of, so that, on his return from a journey he was about to undertake, he might never see him again. He then left the apartment, and the fate of the dog was for a few hours suspended. The interval, though short, was not thrown away. The condemned animal was too much an adept in the tones of his master's voice, to believe there was any hope left for a reversion of his sentence. He therefore adopted the only alternative between life and death, by making his escape. In the course of the evening, while the same servant was waiting at table, his lordship demanded if his order had been obeyed respecting the dog. "After an hour's search, he is no where to be found, my lord," replied the servant. The rest of the domestics were questioned, and their answers similar. The general conclusion for some days was, that the dog, conscious of being in disgrace, had hid himself in the house of a tenant, or some other person who knew him. A month, however, passed without any thing being heard respecting him; it was therefore thought he had fallen into the hands of his late accuser, the farmer, and been hanged for his transgressions.

About a year after, while his lordship was journeying into Scotland, attended only by one servant,

a severe storm drove him to shelter in a hovel belonging to a public-house, situated at some distance from the road, upon a heath. The tempest continuing, threatening rather to increase than abate, the night coming on, and there being no house suitable to the accommodation of such a guest, his lordship was at length induced to dismount, and go into the little inn adjoining the shed. On his entrance, an air of surprise and consternation marked the features and conduct of the inn-holder and his wife. Confused and incoherent answers were made to common questions ; and, soon after, a whispering took place between the two forementioned persons. At length, however the guest was shewn into a small parlour, a faggot was thrown on the fire, and such refreshments as the house afforded were preparing, there being no appearance whatever of more favourable weather allowing them to depart.

As the servant-maid was spreading the cloth, a visible tremor shook her frame, so that it was not without difficulty she performed her office. His lordship noticed a certain strangeness in the whole group ; but remembering to have heard his servant mention the words, " my lord," as he alighted from his horse, he naturally imputed this to their having unexpectedly a guest in their house above the rank of those whom they were accustomed to entertain. The awkwardness of intended respect in such cases, and from such persons, will often produce these embarrassments. His lordship having now made up his mind to remain that night, supper was served ; when a most unexpected visitor made his appearance. " Good heavens !" exclaimed his lordship, " is it possible I should find my poor dog alive, and in this place ? How wonderful ! how welcome !" He stretched forth his hand to caress his long lost favourite ; but the dog, after looking earnestly at his antient master, shrunk from him, and kept aloof,

and took the first opportunity of the door being opened to leave the room ; but still took his station on the other side of the door, as if watching some expected event.

Of the dog's history from the time of his elopement, little more resulted from inquiry, than that he had one day followed some drovers who came to refresh themselves and their cattle ; and that, appearing to be foot-sore with travel, and unable to proceed with his companions, he staid in the house, and had remained there ever since. This account was obtained from the hostler, who added, he was as harmless a creature as any betwixt Scotland and Ireland. His lordship, intending to rise early in the morning, to make up the time thus sacrificed to the night, which was still stormy, ordered the servant to shew him to his chamber. As he passed the common room, which communicated with the parlour, he noticed the inn-keeper and his wife in earnest discourse with three men, muffled up in horsemen's coats, who seemed to have just come from buffeting the tempest, and not to be a little anxious to counteract its effects ; for both the landlord and his wife were filling their glasses with spirits. His lordship, on going to his chamber after the maid and his own servant, heard a fierce growl, as from the top of the stairs. " Here is the dog again, my lord," exclaimed the servant. " He is often cross and churlish to strangers," observed the maid, " yet he never bites." As they came nearer the door, his growl increased to a furious bark ; but upon the maid speaking to him sharply, he suffered her to enter the chamber, and the servant stepped back to hold the light to his lord. On his old master advancing towards the chamber, the dog drew back, and stood with a determined air of opposition, as to guard the entrance. His lordship then called the dog by his name ; and on repeating some terms of

fondness, which in past times he had familiarly been accustomed to, he licked the hand from whose endearments he had so long been estranged. But he still held firm to his purpose, and endeavoured to oppose his master's passing to the chamber. Yet the servant was suffered, without further disputing the point, to go out; not, however, without another growl, though one rather of anger than of resistance, and which accompanied her with increased fierceness all the way down stairs, which she descended with the same strange kind of hurry and confusion that had marked her behaviour ever since his lordship's arrival. His lordship was prevented from dwelling long on this circumstance, by an attention to the dog, who, without being solicited further, went a few paces from the threshold of the door, at which he kept guard: and after caressing his lordship, and using every gentle art of affectionate persuasion, (speech alone left out,) went down one of the stairs, as if to persuade his lordship to accompany him. His lordship had his foot upon the threshold, when the dog caught the skirt of his coat between his teeth, and tugged it with great violence, yet with every token of love and terror; for he now appeared to partake the general confusion of the family. The poor animal again renewed his fondling, rubbed his face softly along his master's side, sought the patting hand, raised his soliciting feet, and during the use of these endearing ways, he whined and trembled to a degree, that could not escape the attention both of the master and the servant.

"I should suspect," said his lordship, "were I apt to credit omens, from a connection betwixt the deportment of the people of this inn, and the unaccountable solicitude of the dog, that there is something wrong about this house." "I have long been of the same opinion," observed the servant, "and wish, your honour, we had been wet to the

skin in proceeding rather than to have stopped here."

"It is too late to talk of wishes," rejoined his lordship, "neither can we set off now, were I disposed, for the hurricane is more furious than ever. Let us therefore make the best of it. In what part of the house do you sleep?" "Close at the head of your lordship's bed," answered the domestic, "in a little closet, slip-side of a room by the stairs—there, my lord," added the servant, pointing to a small door on the right.

"Then go to bed, we are not wholly without means of defence, you know; and whichever of us shall be first alarmed may apprize the other. At the same time, all this may be nothing more than the work of our own fancies."

The anxiety of the dog during this conversation, cannot be expressed. On the servant leaving the room, the dog ran hastily to the door, as if in hopes his lordship would follow; and looking as if to entice him so to do. Upon his lordship's advancing a few steps, the vigilant creature leaped up with every sign of satisfaction; but when he found these steps were directed only to close the door, his dejection was depicted in a manner no less lively than had been his joy.

It is scarcely possible not to be impressed by these unaccountable circumstances, yet his lordship was almost ashamed of yielding to the apprehensions they inspired; and, finding all quiet, both above and below, except the noise of the wind and rain, and finding that no caresses could draw the dog from the part of the room he had chosen, his lordship made a bed for the poor fellow with one of the mats, and then sought repose himself. Neither his dog, however, nor the master, could rest. The former rose often, and paced about the room: sometimes he came close to the bed curtains, and sometimes

whined piteously, although the hand of reconciliation was put forth to sooth him. In the course of an hour after this, his lordship, wearied with conjecture, fell asleep; but he was soon aroused by his four-footed friend, whom he heard scratching violently at the closet door; an action which was accompanied by the gnashing of the dog's teeth, intermixed with the most furious growlings. His lordship, who had laid himself down in his clothes, and literally resting on his arms, his brace of pistols being under his pillow, now sprung from the bed. The rain had ceased, and the wind abated, from which circumstances he hoped to hear better what was passing. But nothing, for an instant, appeased the rage of the dog, who, finding his paws unable to force a passage into the closet, put his teeth to a small aperture at the bottom, and attempted to gnaw away the obstruction. There could be no longer a doubt that the cause of the mischief, or danger, whatsoever it might be, lay in that closet. Yet there appeared some risk in opening it; more particularly when on trying to force the lock, it was found to be secured by some fastening on the inside. A knocking was now heard at the chamber door, through the key-hole of which a voice exclaimed, "For God's sake, my lord, let me in!" His lordship, knowing this to proceed from his servant, advanced armed, and admitted him. "All seems quiet, my lord, below stairs and above," said the man, "for I have never closed my eyes. For heaven's sake, what can be the matter with the dog, to make such a dismal barking?" "That I am resolved to know," said his lordship, furiously pushing the closet door. No sooner was it burst open, than the dog with inconceivable rapidity, rushed in, and was followed both by the master and the man. The candle had gone out in the bustle, and the extreme darkness of the night prevented them from seeing any object

whatever. But a hustling sort of noise was heard at the further end of the closet. His lordship then fired one of his pistols by way of alarm. A piercing cry, ending in a loud groan, immediately came from the dog. "Great God!" exclaimed his lordship, "I have surely destroyed my defender." He ran out for a light, and snatched a candle from the inn-holder, who came, in apparent consternation, as if to inquire into the alarm of the family. Others of the house now entered the room; but without paying attention to their questions, his lordship ran towards the closet to look for his dog. "The door is open! the door is open!" As his lordship was re-entering the closet, he was met by his servant, who, with every mark of almost speechless consternation in his voice and countenance, exclaimed, "O my lord! my lord! I have seen such shocking sights," and, without being able to finish his sentence, he sunk on the floor. Before his master could explore the cause of this, or succeed in raising up his fallen domestic, the poor dog came limping from the closet, while a bloody track marked his path. He gained, with great difficulty, the place where his lordship stood aghast, and fell at his master's feet. Every demonstration of grief ensued; but the dog, unmindful of his wounds, kept his eyes still intent upon the closet door; and denoted that the whole of the mystery was not yet developed.

Seizing the other pistol from the servant who had fallen into a swoon, his lordship now re-entered the closet. The wounded dog crawled after him, when, on examining every part, he perceived, in one corner, an opening into the inn-yard, by a kind of trap-door, to which some broken steps descended. The dog seated himself on the steps; but there was nothing to be seen but a common sack. Nor was any thing visible upon the floor, except some drops of blood, part of which were

evidently those which had issued from the wound of the dog himself, and part must have been of long standing, as they were dried into the boards. His lordship went back into the bed-chamber, but the dog remained in the closet. On his return, the dog met him, breathing hard, as if from violent exercise, and he followed his master into the chamber.

The state of the man-servant, upon whom fear had operated so as to continue him in a succession of swoons, now claimed his lordship's attention; and, while these were administered, the dog again left the chamber. A short time after this, he was heard to bark aloud, then crying, accompanied by a noise, as if something heavy was drawn along the floor. On going once more into the closet, his lordship found the dog trying to bring forward the sack which had been seen lying on the steps near the trap-door. The animal renewed his exertions at the sight of his master; but again exhausted both by labour and loss of blood, he rested his head and his feet on the mouth of the sack.

Excited by this new mystery, his lordship now assisted the poor dog in his labour, and, though that labour was not light, curiosity and the apprehension of discovering something extraordinary on the part of his lordship, and unabating perseverance on that of the dog, to accomplish his purpose, gave them strength to bring at length the sack from the closet to the chamber. The servant was somewhat restored to himself, as the sack was dragged into the room; but every person, who in the beginning of the alarm had rushed into the apartment, had now disappeared.

The opening of the sack surpassed all that human language can convey of human horror.

As his lordship laid the cord which fastened the sack's mouth, the dog fixed his eyes on it, stood

over it with wild and trembling eagerness, as if ready to seize and devour the contents.

The contents appeared, and the extreme of horror was displayed. A human body, as if murdered in bed, being covered only with a bloody shirt ; and that clotted, and still damp, as if recently shed ; the head severed from the shoulders, and the other members mangled and separated, so as to make the trunk and extremities lie in the sack, was now exposed to view.

The dog smelt the blood ; and, after surveying the corpse, looked piteously at his master, and licked his hand, as if grateful the mysterious murder was discovered. It was proved, that a traveller had really been murdered two nights before his lordship's arrival at that haunt of infamy ; and that the offence was committed in the very chamber, and probably in the very bed, wherein his lordship had slept ; and which, but for the warnings of his faithful friend, must have been fatal to himself.

The mail-servant was an accomplice in the guilt ; and the ruffian travellers, who were confederating with the inn-holder and his wife, were the murderers of the bloody remains that had been just emptied from the sack, whose intent it was to have buried them that night in a pit, which their guilty hands had dug in an adjacent field belonging to the inn-holder, whose intention it likewise was to have murdered the nobleman, which was providentially prevented by the wonderful sagacity of the dog. The inn-keeper and his wife were taken up, and punished according to their deserts ; and the nobleman was so affected at his miraculous escape, that he bound up the wounds of the faithful dog with the greatest care, and the balm of love and friendship were infused. The master's hour of contrition was now come : he was sorry he had ever neglected so invaluable a friend ; and, as the only peace-offering, in his power, departed

with this faithful companion from the house of blood, to that mansion which the latter had formerly left in disgrace ; where the caresses of a grateful family, and an uninterrupted state of tranquillity, meliorated with every indulgence they could bestow, was regularly continued as long as he lived.

The servants of a gentleman, who had a house near the river's side, opposite to a little island, in the river Thames (which is said from this circumstance to have been named the Isle of Dogs,) observed that a dog came constantly every day to them to be fed ; and, as soon as his wants were satisfied, took to the water and swam away. On relating this to their master, the gentleman desired them to take a boat and follow the dog, the next time he came. They did so, and the dog at their landing expressed great pleasure, and made use of all the means in his power to invite them to follow him, which they continued to do, till he stopped and scratched with his foot upon the ground ; and from that spot he would not move. Either that day or the next they dug up the earth in the place, and found the body of a man ; but it was impossible to discover who it was ; and after every requisite step had been taken to find out the murderer, the corpse was buried and the dog discontinued his visits to the island. The gentleman, pleased with a creature which had shewn such uncommon sagacity and attachment to his former master, caressed him greatly, and made him the frequent companion of his walks.

When he had been in possession of the faithful animal for some time, he was going to take a boat at one of the stairs in London, when the dog, which had never before been known to do such a thing, seized one of the watermen. The gentleman immediately thought that this fellow was the murderer of the dog's master, and taxed him with it ; and he di-

rectly confessed it ; on which he was taken into custody, and soon after hanged for the crime.

SHIN-NAI.

It is said, that in the great forests round Savannadurga, there is a small animal called the shin-nai, or red dog, which fastens itself by surprise on the neck of the tiger, and kills him. On this account the tiger is not so common in these large forests, as in smaller woods. The shin-nai is quite distinct from the wild dog, which is said to be very common here, to grow to a large size, and to be very destructive to sheep. By this wild dog the natives probably mean the wolf. Dr. Buchanan saw native drawings of the shin-nai, which appear to present an animal not yet described

LION.

Mr. BARROW relates the following story in his account of that journey in the south of Africa, in which the city of Lectakoo was discovered.

One of the Hottentots (of Mr. Kicherer's company) was still smarting under the recent wounds received from a lion, which he had the misfortune to encounter, and from whose voracious fangs his escape was little less than miraculous. Having observed the fresh traces of a lion's paws leading to the kraal where his master's sheep were pent up by night, the Hottentot had placed what the Dutch call a stell-roer or trap-gun in the passage leading into the kraal, with a view to destroy the nightly despoiler. The following morning, on going to the spot, he found the gun discharged, and, from the quantity of blood sprinkled on the ground, concluded that the contents must have been lodged in the body of the animal. Following the traces of

the blood on the ground, he incautiously approached too near to a neighbouring thicket, out of which, before he had time to present his musket, the wounded lion burst forth, and, pouncing upon the poor Hottentot, laid him flat on the ground with a single pat of his paw. The royal brute bestrode the Hottentot with great composure; and, as if conscious of having obtained his enemy within his clutches, seemed determined to prolong the sweet delight of revelling in his revenge. According to the poor fellow's statement, he pawed him just as a kitten is wont to play with a mouse; and that whenever he attempted to stir, he was sure to receive what the lion might consider a gentle tap, but which, however, generally carried away with it a piece of flesh. Both his arms had been lacerated in a shocking manner by this lion's play, with which he continued to amuse himself, and torment his vanquished enemy, for a considerable length of time, without the least apparent intention of speedily making a meal of him. The master of the Hottentot having by accident discovered the traces of blood, followed him to the scene of action, and, casting his eyes on the spot, saw with terror the critical situation of his Hottentot. He possessed, however, sufficient presence of mind to level his piece; and, taking a cool and steady aim, he shot the lion dead upon the Hottentot, the skin of which he carried with him, as a trophy of one of the most fortunate but critical shots that perhaps was ever made, as, had he missed his aim, his own fate was involved in that of the Hottentot.

OXEN.

THE following anecdotes of their qualities in the African desert are delivered on the authority of Vaillant.

A heavy fall of rain, which happily took place

during the night, revived my hopes ; but, heavy as it was, it appeared to me, at the time, as if it could be of no service to my cattle ; for what relief were they likely to derive from water which disappeared as soon as it fell, and was instantly lost in the sand ? They nevertheless found means to drink of this rain, which I thought would be useless to them, by a method, the possibility of which I could never have suspected, and which afforded me a new opportunity of admiring the sagacity of animal instinct. The water, as it fell upon them, formed itself into drops, which, uniting, ran down their sides in small streams. On the commencement of the storm they had assembled in groups ; and, in this position, thronged one against the other, licked and collected each from the body of its neighbour the streamlets of rain as it trickled down. My cattle, by this unexpected supply, having quenched their thirst, and being at the same time refreshed, recovered their strength : but what increased my astonishment was, that the two I had left on the road, worn out and expiring, had been also revived, and doubtless in the same manner ; for they both joined my camp in the night ; and Klaas, who always took delight in being the first to communicate agreeable intelligence, came to me at day-break, elated with joy, to inform me of the circumstance.

The same author, who had abundant opportunities to obtain information upon the subject, assures us from experience, that there is no cloven-footed animal in which the vital powers are more slowly renovated than in the ox. Having no cutting teeth in the upper jaw, it can pluck up the grass only with its lips, which, being, thick, will not allow it to crop the short and succulent blades of the young shoots. If fatigue does not leave it sufficient strength to ruminate, when it meets with forage of indifferent quality, its stomach, for want of this second and necessary mas-

ducation, has to exercise its digestive faculty on imperfectly comminuted grass, incapable of affording due nourishment.

The number of wild oxen in South America, says a late traveller in that country, is so great, that every year one hundred thousand are killed solely for the sake of their hides. About twenty hunters on horseback proceed to the spot where these animals are known to herd, having in their hands a long stick, shod with iron, very sharp, with which they strike the ox that they pursue on one of the hind legs, and they make the blow so adroitly, that they almost always cut the sinews in two above the joint : the animal soon afterwards falls, and cannot rise again. The hunters, instead of stopping, pursue the other oxen at full gallop, with the reins loose, striking in the same manner, all which they overtake : thus eighteen or twenty men will easily fell seven or eight hundred oxen in one hour. When they are tired of the exercise, they dismount to rest, and afterwards, without danger, knock on the head the oxen which they have wounded. After taking the skin, and sometimes the tongue and suet, they leave the rest for the birds of prey.

BUFFALO.

THE woods and thickets being well stocked with buffaloes, whose flesh is savoury and good, and hides particularly valuable to the boors, as being the best and toughest for traces, and other waggon furniture, a party went out with a full determination to spend the day in the chase after these huge animals. They presently started a whole herd ; and, at the first volley, succeeded in bringing down a large cow. The herd dispersing in every direction, three of an enormous size were observed to rush into a thicket close to the spot where the waggon and tents were placed. Daniel.

the secretary, and Schultz the overseer of the waggons, having marked the exact spot where they had retreated for shelter ; and, thinking the opportunity too favourable to allow them to escape, kept close to the thicket with their dogs and their muskets. Schultz having the same day shot an ostrich, had ornamented his hat with its bowing plumes. Elated with the hope of success, he hastened, without stopping, towards the opening into which the animals had retired ; when suddenly, and quite unexpectedly to him, a huge bull buffalo came rushing out of the thicket ; and, eyeing for a moment the white plume waving in his hat, bolted directly towards him. Schultz, petrified with fear, remained motionless on the spot ; and the buffalo, taking him up on the points of his horns, tossed him over his head many feet into the air, from whence he fell among the branches of a thorny mimosa. Daniell, having observed the fate of his companion, had just time enough to escape a similar fate by climbing into a tree. The buffalo, being baited by the dogs, and observing the whole party coming up, thought fit to retire. Poor Schultz returned to the waggons, bloody, pale, and almost lifeless, with terror ; persisting, however, that he was not in the least hurt, or intimidated, by what had happened ; but while he was speaking, he fainted, and it was several days before he recovered from the effects of his wound and his fright. This, says Mr. Trutter, was the last attempt he made to be thought a sportsman, having now learned by experience, that it was not the province of every one to turn buffalo hunter.

HIPPOPOTAMUS

As this animal has been rarely seen by any European traveller, the following anecdotes by Vaillant may not be deemed uninteresting. The old man (a Nimiqua chief) had not quitted me a moment ;

and I availed myself of his company to obtain all the information he could give respecting the country. He, on his part, did not let slip the opportunity of speaking to me of his troubles. He was not far from the river, where hippopotami abounded ; and he and his companions would have been very glad to procure some occasionally for food : but, although they had digged holes, and set traps for them along the shore, they had never been able to catch more than three during the two years he had dwelt there. The creatures, he said, were too cunning for them ; though he had no doubt but I, with my fusees, of the effects of which he had heard, might have as many as I pleased.

Such an observation was an indirect request for me to render the horde a service. It gave me an opportunity of making myself friends ; and, had not the distress of my situation imposed this on me as a matter of necessity, I would have done it from humanity, to serve these poor savages

I resolved therefore to set off the next day in the afternoon, spend the night near the river, and begin the chase the following morning at the peep of dawn. I took with me all my hunters. A party of the horde followed, with some pack-oxen for carrying the fruits of our sport ; and at day-break all my people were in motion.

Half of our company passed the river by swimming, while the other half remained on my side. When the swimmers had gained the opposite bank, they separated into two parties, one of which went a certain way up the river, and the other down. We did the same on my side. The four parties thus included a part of the river three quarters of a league in extent. I remained alone in the centre of those who were to beat for the game.

At an appointed signal, all were ordered to set out from their posts, and advance slowly towards me,

some shouting aloud, others occasionally firing their pieces, in order to drive towards me the hippopotami that might be in that part of the river. They found eight ; and all the parties being assembled at the common centre, patience and address only were wanting to our purpose.

In a short time we had wounded several. Two were even killed ; and the people of the horde were enraptured with joy. But some of them going into the river to draw the dead ones ashore, one of the swimmers received a stroke from the snout of one of the wounded hippopotami, and one had his thigh ripped up by the tusk of another. These accidents made me fear something worse ; wherefore I recalled all my people ; and, to the great regret of the Nimiquas, put an end to a hunt, which had every prospect of being more productive, but which could not be continued without great risk.

The remainder of the day, and part of the next morning, were employed in cutting up the animals we had killed, and loading our oxen with them. The smell that issued from them, carried to a distance by the winds, drew to the place numbers of hawks and vultures, which followed us for a long time, sailing over our heads.

The vultures appeared to me of a new and unknown species. But I attempted to shoot some of them in vain ; for they kept themselves always out of gunshot, and the report of my fusée did nothing but drive them off without return.

Our arrival at the horde was welcomed with great joy, and this joy was unbounded when it was known, that except a few pieces for my people, I meant to give up the whole of the two animals to the kraal. The chief, as a testimony of their gratitude, requested me, in the name of the whole, to accept a fat ox.

FINIS.

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